GENERAL ZOOLOGY

or

SYSTEMATIC NATURAL HISTORY

by

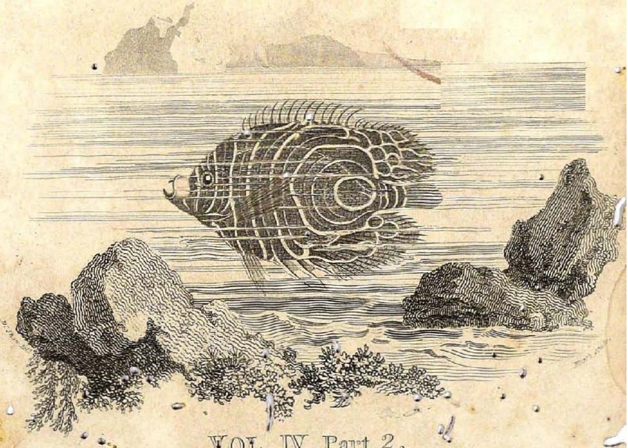
GEORGE SHAW M.D. F.R.S &c.

WITH PLATES

from the firſt Authorities and moſt select specimens

Engraved principally by

M^r. HEATH.



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The Vignette represents the Chætodon geometricus, described at p. 354.

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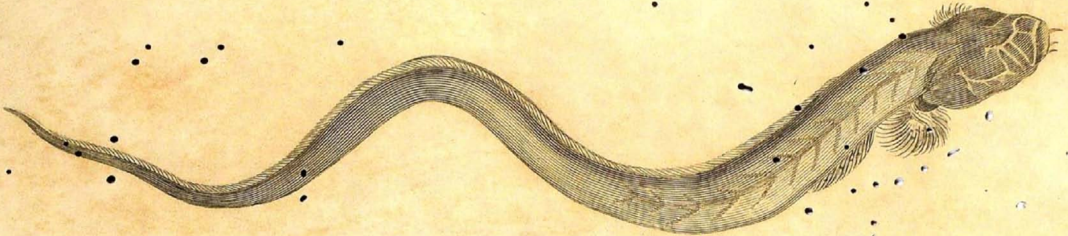
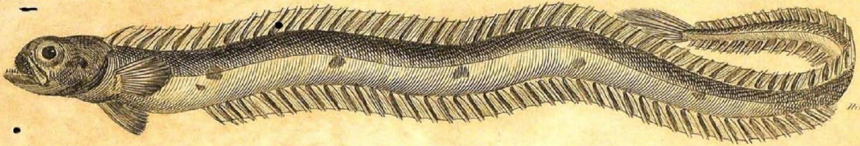
ERRATA.—VOL. IV. PART II.

P. 410, l. 13, for *Sparus chrysops, Bloch.* read *Lutianus Chrysops, Bloch.*
P. 578, l. 22, place the *asterisk* l. 22, at line 1, after the word *mud.*

26.



Hermannian Band-Fish.



Heath sculp.

Common Band Fish.

1803 July 1. London Publish'd by G. Kearsley Fleet Street.

FISHES.

ORDER

THORACICI.

CEPOLA. BAND-FISH.

Generic Character.

Caput breve: dentes curvati, acuti.
Corpus longissimum, compressum, abdomine brevissimo.
Membr. branch. radiis sex.

Head short: teeth curved, sharp.
Body very long and compressed: abdomen extremely short.
Gill-Membrane six-rayed.

COMMON BAND-FISH.

Cepola Tænia. *C. argentea, pinnis rubris, capite obtusissimo, cauda attenuata.*

Silvery Band-Fish, with red fins, very obtuse head, and attenuated tail.

Cepola Tænia. *C. pinna caudæ attenuata, capite obtusissimo. Lin. Syst. Nat. p.* 445.
Tænia auctorum. *Artedi gen.* 83. *syn.* 114.
Cepola capite truncato. *Bloch. pl.* 170.

THIS remarkable species is of a form so thin and flat in proportion to its length as to have obtained among the ancient ichthyologists the title of Tænia or ribband-fish. It is a native of the Mediterranean sea, and is sometimes found of the length of three or four feet, though the generality of specimens do not exceed the length of eighteen inches or two feet: the head is short, and rounded, or rather truncated in front: the mouth is wide, opening downwards; the lower jaw somewhat exceeding the upper in length: both are armed with moderately large, sharp, and curved teeth, placed in a single row in the upper, and in a double one in the lower jaw: the tongue is broad and rough: the eyes very large, with silvery irides: the abdomen, properly speaking, is so very short as scarce to exceed the length of the head, and from this part the body is continued of equal diameter for a great extent, gradually tapering as it approaches the tail: the sides are extremely compressed, and the body, both above and below, sharpens into a kind of carina or ridge: the pectoral fins, which are placed immediately beyond the gills, are ovate, and of moderate size: beneath them are situated the ventral fins, which are of nearly similar form: the dorsal, which is of moderate breadth, and furnished with pretty numerous distinct rays, com-

mences from the back of the head, and is continued as far as the tail, which is of moderate size and of an oval shape: the vent fin commences at a small distance from the ventral ones, and like the dorsal is continued to the beginning of the tail: the colour of the body is bright silver, with a dusky tinge above, and marked along the sides by a few obscure, distant, and rather large reddish spots: the lateral line runs strait through the middle of the body from the head to the tail: the fins are all of a pale red colour, and the skin is covered with extremely small scales. This fish is said to swim with great rapidity, in the manner of the Trichiure, and to present a beautiful spectacle by the undulating flexures of its body. It is of a predacious nature, living principally on the smaller kind of crabs and shell-fish, the remains of which are said to be usually found in its stomach. From its extreme thinness, which is such as almost to permit the vertebræ to be seen through the sides, it is scarcely considered as an eatable fish. It is observed to frequent the neighbourhood of the shores, in order the more readily to obtain its food, and is occasionally used by the fishermen for the purpose of a bait.

RUBESCENT BAND-FISH.

Cepola Rubescens. *C. rubescens, pinna caudæ attenuata, maxillis acutis.*

Reddish Band-fish, with attenuated tail, and pointed jaws.

Murus alter, sive Serpens rubescens Rondeletii. Aldr. pisc. p. 367.

Ophidium macropthalmum. Lin. Syst. Nat. ed. X. p. 259.

This species, which seems to be far rarer than the preceding, and which is not very distinctly described by those authors who have seen it, is said to have a pointed rather than a rounded head, and to be not so thin in the body: to be of a pale red colour throughout, marked transversely by numerous, narrow, and somewhat undulated streaks: lateral line as in the preceding species: back and vent fin placed as in the former, but shallower, and with more disjoined or separated rays: indeed from the expression of Rondeletius one might doubt whether he meant that the rays were connected by any membrane or not; ("In dorso a capite ad caudam velut capillamenta tenuia a sese disjuncta; in ventre similia.") It is questioned, and not without reason, by Willughby whether the fish be any thing more than some variety of the former kind; and so far as can be judged from the rude figures of Rondeletius and Aldrovandus, it can scarcely be considered as a distinct species. It is said to be a native of the Mediterranean.

ROUGH-FINNED BAND-FISH.

Cepola Trachyptera. *C. capite declivi, maxilla utraque fornicata, pinnis aculeatis serratis scabris. Lin. Syst. Nat. Gmel. p.* 1187.

Band-fish with sloping head, arched jaws, and prickly, serrated, rough fins.

Native of the Mediterranean: observed in the Adriatic Gulf: described as having a strait lateral line, with a single row of scales, and the first rays of the fins strong, sharp, and rough.

HERMANNIAN BAND-FISH.

Cepola Hermanniana. *C. capite angulato, oculis minimis, ore cirroso, cauda subulata.*

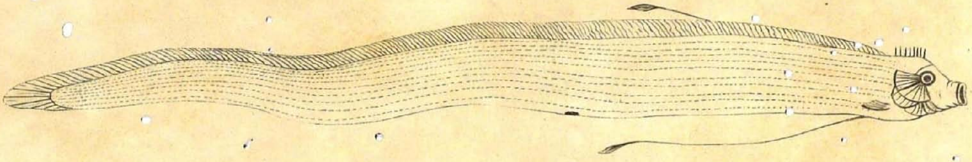
Band-Fish with angular head, extremely small eyes, bearded mouth, and subulate tail.

Le Tænioide Hermannien. *Cepede,* 2. *p.* 533, *pl.* 14.

Described by Cepede, who ranks it in a distinct genus, under the title of *Tænioides*. He observes that though of the same general form, thinness, &c. yet it differs in many points from the true Cepolæ. The eyes are so small as to be with great difficulty discovered, and consist of two small black points: there is no caudal fin, the tail terminating in the same manner as in the Trichiures, viz. in a fine point: the dorsal fin, which is very shallow, with soft rays, commences at no great distance from the head, and is continued to the extremity of the

tail: the vent is situated opposite the origin of the back fin, and from it commences a very short and shallow vent fin, continued only to a small distance beyond the vent: the pectoral fins are moderately large, rounded, and furnished with numerous, soft, setaceous rays: the head, which is of moderate size, is as it were marked into facets, as represented on the plate, and at the mouth are placed a few cirri or beards of unequal length: there are no visible scales on the skin, and the disposition of the muscles may be traced through it: the pectoral and anal fins are marked by a few small black specks.

This fish takes its specific name from Professor *Hermann* of Strasburg, so well known by his learned labours in natural history. It seems to have been described from a dried specimen, and in point of natural affinity, may be considered as equally allied to the genera of Cepola and Trichiurus. No mention is made of its colour or its native region.



Hill sculp.

ASCANIAN GYMNETRUS.

1803 July 1. London Published by G. Kearsley Fleet Street.

Generic Character.

Corpus longissimum, compressum.	*Body* extremely long, compressed.
Dentes numerosi, subulati.	*Teeth* numerous, subulate.
Membr. branch. 4—5—radiata.	*Gill-membrane* four or five-rayed.
Pinna analis nulla.	*Anal fin* wanting.

ASCANIAN GYMNETRUS.

Gymnetrus Ascanii. *G. argenteus, corpore longitudinaliter fusco punctato, cirris ventralibus apice dilatatis.*

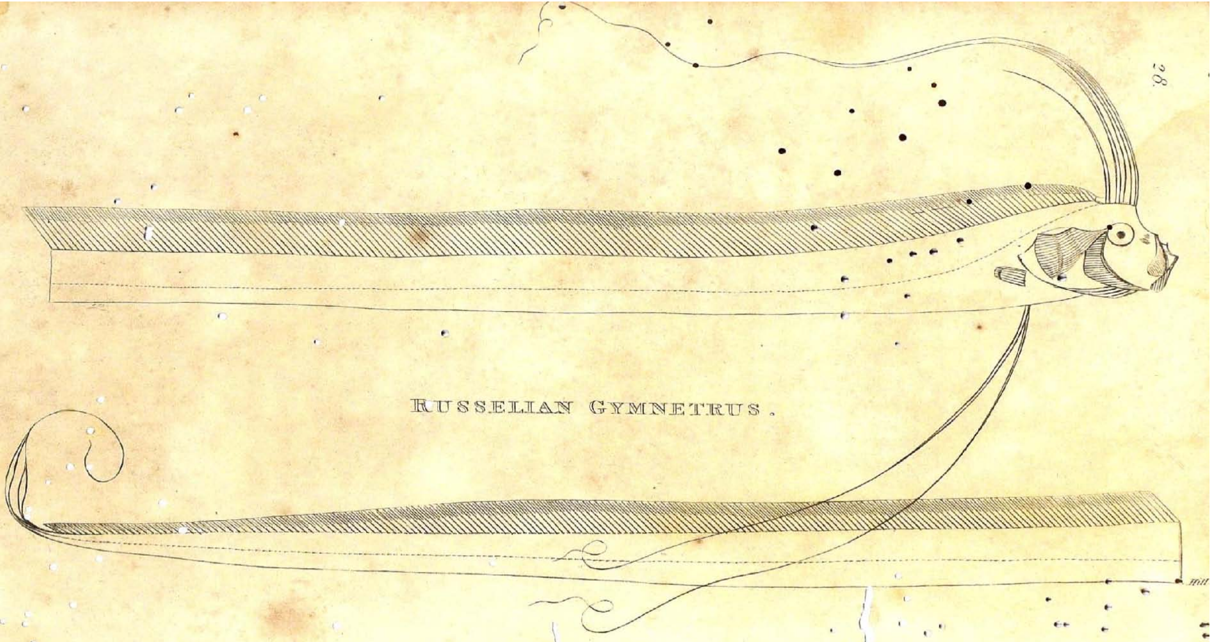
Silvery Gymnetrus, speckled longitudinally with brown points, and with the ventral cirri dilated at the tips.

Regalecus Glesne. *Ascan. ic. rer. nat. t.* 11.

THIS extraordinary fish seems to have been almost unknown till within the space of a few years past; nor are its characters and history yet so distinctly ascertained as might be wished. It is a native of the northern seas, and seems to have been first described by Professor Ascanius in his work entitled *Icones rerum natularium, &c.* The length of the specimen was ten feet, and the diameter, which was equal throughout the whole length,

about six inches: the head short, the mouth small, and the eyes rather large: on the upper part of the head, before the commencement of the dorsal fin, were situated seven or eight upright, naked rays or processes, of moderate length: the dorsal fin, which was rather shallow, commenced at a small distance beyond these, and running along the whole length of the back, formed by its continuation the tail-fin, which was carried to a very small distance beneath the body, there being, properly speaking, no vent-fin: the pectoral fins were very small, of a slightly ovate or rounded shape, and situated at a small distance from the head: the ventral fins, if they can be said to deserve the name, consisted of a pair of extremely long single rays or processes terminated by a small ovate expanded tip or finny extremity: the gill-covers appeared to consist of five or six radiated laminæ: the colour of the whole body was bright silver, with a blueish cast diffused over the upper part of the back: the lateral line was strongly marked, and ran from the gill-covers to the tail, and the sides of the body were marked by several longitudinal double rows of slightly extant, very small, dusky specks: the forehead was white; the fins pale brown.

This fish is said to be generally seen either preceding or accompanying the shoals of herrings in the northern seas, for which reason it is popularly known by the title of *King of the Herrings*.



RUSSELIAN GYMNETRUS.

1803 July 1. London Publish'd by G. Kearsley Fleet Street.

VAR?

Russelian Gymnetrus.

Described from a drawing in the possession of Dr. Russel. General proportions similar to those of the first described species, except that the dorsal fin is considerably wider: from the top of the head proceeds an extremely long process, passing to a considerable distance over the back: this process is very broad at its base, where it appears to be strengthened by four stout rays, which gradually coalesce in their progress till at length they form a single filament: at some little distance beyond the base is a second process of similar form, but much shorter and consisting but of one ray gradually lessening to its point: the pectoral fins are very small: the ventral processes are of great length, but terminate in mere filaments, without any dilated extremities, and the tail, which consists of a lanceolate membrane strengthened by two external or bounding rays, is furnished with a similar terminating filament: the colour of the whole body is bright silver; the fins pale brown; the dorsal fin edged with a dusky border.

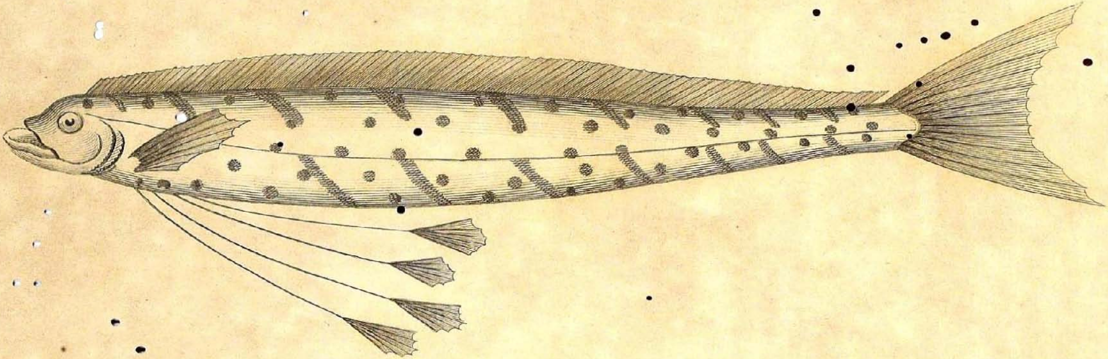
The length of the above specimen, which was taken near Vizagapatam in the year 1788, was two feet eight inches from head to tail. It might therefore be considered either as a variety, or a sexual difference of the preceding species in a younger

state; the differences being not such as absolutely to contradict this supposition.

From Dr. Russel's memorandums on this subject, politely communicated during my description of this genus, it appears that no teeth were visible in either jaw, whereas in the Ascanian fish the teeth are expressly said to have been of a subulated form: the opercula consisted of two oblong, flexible, streaked plates: the abdomen was very short, and the vent placed near the head: (in the Ascanian fish it was situated towards the middle of the abdomen.) The caudal fin was not united with the dorsal, and consisted of four rays, connected at the base by a thin membrane, and afterwards joined together and ending in a setaceous thread. The gill-membrane had five rays; the dorsal fin 320: (in the Ascanian fish, notwithstanding its vast length, there were only 120.) The pectoral fin had eleven rays, the ventral two, and the caudal four *.

In the British Museum is a dried specimen of a fish which appears to be nearly allied to the preceding, but which is not sufficiently perfect to admit of very exact description: the body is much shorter in proportion: the lateral line extremely strong or distinct: the colour of the whole animal, except the fins and processes (which are red), a bright silver; and from the top of the

* I must here observe that, (regarding the number of rays in the fins of fishes, and more especially in those which have long and shallow fins, as a character on which no very great dependence is to be placed,) I have not been solicitous to introduce it, except in a few instances, into the present work.



Hill sculp.

BLOCHIAN GYMNETRUS.

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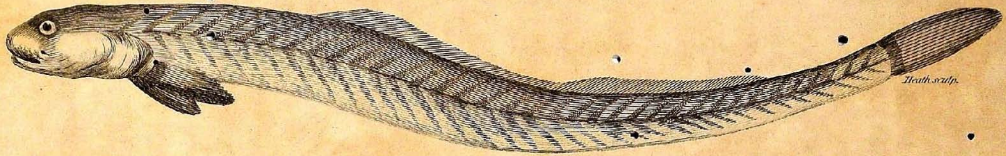


CEPEDIAN GYMNETRUS.

1803. July 1. London Publish'd by G. Kearsley Fleet Street.

head proceeds a very strong horn-shaped process of the length of several inches, gradually tapering into a slender extremity: the length of this specimen is about four feet and a half, and the breadth about five inches, exclusive of the back fin.

BLOCHIAN GYMNETRUS.

Gymnetrus *argenteo-cærulescens, fasciis linearibus, obliquis, maculisque rotundatis fuscis, pinnis rubris, ventralibus quatuor.*

Blueish-silvery Gymnetrus, with oblique, linear, brown bands, and rounded spots, red fins, and four ventral processes.

Gymnetrus Hawkenii. *G. pinna ventrali biradiata. Bloch. pl.* 423.

THIS, which is a native of the Indian seas, and which appears also to be occasionally seen in those of Europe, is described by Dr. Bloch from a drawing communicated by J. Hawkins, esq. In its general appearance it is much allied to the preceding kinds, but appears to be furnished with two pair of ventral processes, which are of considerable length, and terminate in large, dilated, finny extremities of an oval form: the back-fin is continued as far as the tail, which, in the figure given by Dr. Bloch, is represented as of the usual form in the generality of fishes, (a circumstance probably owing to a mistake of the draughtsman*.) The colour of this species is silvery, with a blueish cast

* I am assured by Mr. Hawkins that this is really the case, the specimen from which the drawing was taken having been defective in that part.

on the upper parts, and several transverse, alternate, brownish shades continued along the body; accompanied by large, distant round spots of a similar colour: the fins and processes deep crimson: the pectoral fins pretty large in proportion.

It appears from a print, published in the year 1798, that a specimen of this fish was thrown on the coast of Cornwall in the month of February in the same year. Its length was eight feet six inches, its breadth in the widest part ten inches and a half, and its thickness only two inches and three quarters: the tail in this specimen was wanting: the colours the same as in the specimen figured by Dr. Bloch.

CEPEDIAN GYMNETRUS.

Le Regalec lanceolé. *Cepede pisc.* 2. *p.* 219.

This, which must be considered as a doubtful species, is described by Cepede from a coloured Chinese drawing belonging to the Museum of the Prince of Orange. The author refers it to the present genus from the circumstance of its wanting the anal fin, and gives it the trivial name of lanceolatus from the shape of its tail, which is pointed at the tip. This fish is of a gold-colour, shaded with brown, and is destitute of the ventral fins or appendages so remarkable in the other species.

VANDELLIUS. VANDEL.

Generic Character.

Corpus longissimum, ensiforme.	*Body* extremely long, sword-shaped.
Membr. branch. radiis quinque vel sex.	*Gill-membrane* five or six-rayed.
Dentes subulati, anterioribus majoribus.	*Teeth* subulate, those in front largest.

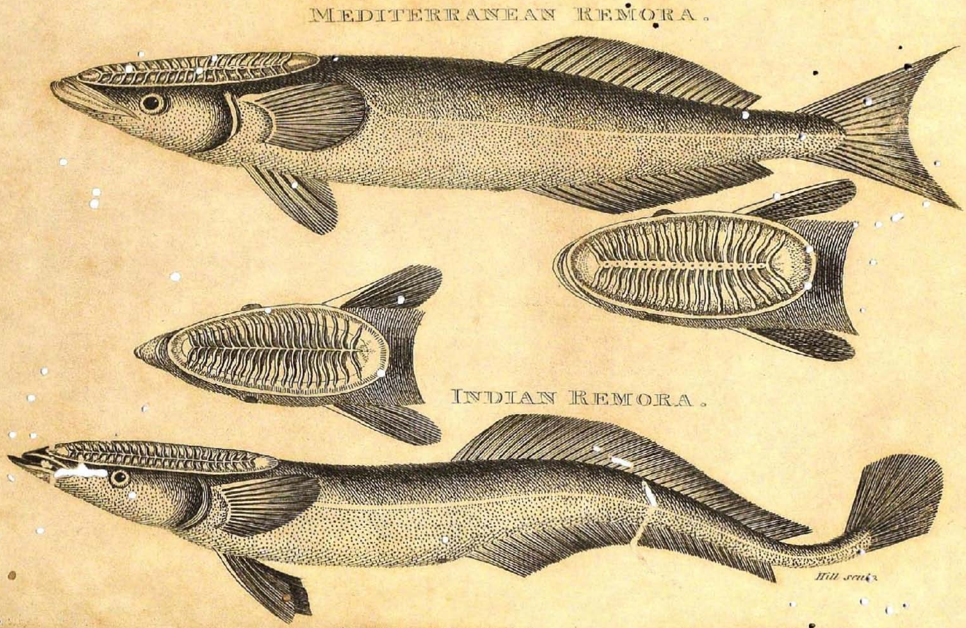
LUSITANIAN VANDEL.

Vandellius Lusitanicus. *V. argenteus, cauda furcata.*
Silvery Vandel, with forked tail.
Trichiurus ensiformis. Vandelli. *Brit. Mus.*

THIS fish, of which a dried specimen, in good preservation, occurs in the British Museum, is found, though very rarely, in the Mediterranean and Atlantic seas; has been sometimes taken near Lisbon, and has been considered by Dr. Vandelli of Coimbra as greatly allied to the genus Trichiurus.

The length of the specimen in the British Museum is four feet eight inches; the breadth (exclusive of the back fin, which is about an inch

wide) three inches and a half; and the thickness very slight in proportion. The head is of the usual form in the generality of fishes, and the lower jaw somewhat exceeds the length of the upper: the mouth is moderately wide, and furnished, both above and below, with a row of middle-sized, sharp teeth, but of which the two front ones in the upper jaw, as well as two lateral ones at no great distance from them, far exceed the rest in size: the tongue is cartilaginous, spatular, and about three quarters of an inch in length: the eyes very large, with silvery irides: the gill-covers consist of a large single piece on each side, and the gill-membrane is furnished with five rays: the dorsal fin is continued from the hind part of the head throughout the whole length of the back, as far as the tail, which is small and very much forked, with sharp tips: the pectoral fins are of moderate size, thin, ovate, or rather subacute, with about twelve rays: the anal fin is much shallower than the dorsal, and commences at the distance of but a few inches from the tail, to the base of which it is continued: the lateral line commences from the upper part of the head, and runs strait to the tail: the colour of the whole fish, except on the fins and tail, which are pale brown, is rich silver, with a dusky blueish tinge towards the back, and without any appearance of scales: the dorsal fin has 105 pretty strong rays; the pectoral fins about 12; the anal 20, and the tail 20, subdivided at their tips.



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ECHENEIS. REMORA.

Generic Character.

Caput nudum, clypeo ovato plano transversim sulcato.	*Head* furnished above with a flat, ovate, transversly sulcated shield.
Membr. branch. radiis sex.	*Gill-membrane* six-rayed.
Corpus nudum.	*Body* without scales.

MEDITERRANEAN REMORA.

Echeneis Remora. *E. fusca, striis capitis octodecim, cauda subfurcata.*

Brown Remora, with about eighteen bars on the shield, and subfurcated tail.

Echeneis Remora. *E. cauda bifurca, striis capitis* 18. *Lin. Syst. Nat. p.* 446.

Remora Imperati & Aldrovandi. *Will. p.* 119.

Echeneis pinna caudali semilunata. *Bloch. pl.* 172.

THE extraordinary faculty which this fish possesses of adhering at pleasure with the utmost tenacity to any moderately flat surface, was not unobserved by the ancients, and is described in terms of considerable luxuriance by Pliny in particular, who, giving way to the popular prejudices of his time, represents the Remora as

possessing the power of stopping a vessel in full sail, so as to render it perfectly immoveable in the midst of the sea.

"Ventum est ad summa Naturæ, &c."

I shall give the translation in the words of Philemon Holland.

"Having so far proceeded in the discourse of Nature's historie, that I am now arrived at the very heigth of her forces, and come into a world of examples, I cannot chuse but in the first place consider the power of her operations, and the infinitnesse of her secrets, which offer themselves before our eyes in the Sea: for in no part else of this universal frame is it possible to observe the like majestie of Nature: insomuch as we need not seeke any farther, nay we ought not to make more search into her divinitie, considering there cannot be found any thing equall or like unto this one Element, wherein she hath surmounted and gone beyond her own selfe in a wonderfull number of respects. For first and foremost, Is there any thing more violent than the Sea, and namely when it is troubled with blustring winds, whirlepuffs, storms and tempests? or wherein hath the wit of man been more employed (seeke out all parts of the whole world) than in seconding the waves and billows of the Sea, by saile and ore? Finally, is there ought more admirable than the inenarrable force of the reciprocall tides of the Sea, ebbing and flowing as it doth, whereby it keepeth a current also, as it were the stream of some great river?

"The current of the sea is great, the tide much, the winds vehement and forcible, and more than that, ores and sailes withall to help forward the rest, are mightie and powerfull: and yet there is one little sillie fish, named Echeneis, that checketh, scorneth, and arresteth them all; let the winds blow as much as they will, rage the storms and tempests what they can, yet this little fish commaundeth their furie, restraineth their puissance, and maugre all their force as great as it is, compelleth ships to stand still: a thing which no cables be they never so big and able as they will, can performe. She bridleth the violence and tameth the greatest rage of this universall world, and that without any paine that she putteth herselfe unto, without any holding and putting backe, or any other meanes save only by cleaving and sticking fast to a vessell: in such a sort as this one small and poore fish is sufficient to resist and withstand so great a power both of sea and navie, yea and to stop the passage of a ship, doe they all what they can possible to the contrarie. What should our fleets and armadoes at sea, make such turrets in their decks, and forecastles? what should they fortifie their ships in warlike manner, to fight from them upon the Sea, as it were from mure and rampier on firme land? See the vanitie of man! alas, how foolish are we to make all this adoe? When one little fish, not above half a foot long, is able to arrest and stay perforce, yea and hold as prisoners our goodly tall and proud ships, so well armed in the beake-head with yron pikes and brazen

tines; so offensive and dangerous to bouge and pierce any enemie ship which they doe encountre. Certes, reported it is, that in the naval battaile before Actium, wherein *Antonius* and *Cleopatra* the queene were defeited by *Augustus*, one of these fishes staied the admirall ship wherein *M. Antonius* was, at what time as he made all the hast and meanes he could devise with help of ores to encourage his people from ship to ship, and could not prevaile, untill he was forced to abandon the said admirall and goe into another galley. Meanwhile the armada of *Augustus Cæsar*, seeing this disorder, charged with greater violence, and soone invested the fleete of *Antonie*. Of late daies also, and within our remembrance the like happened to the Roiall ship of the Emperour *Caius Caligula*, at what time as he rowed backe, and made saile from Astura to Antium; when and where this little fish detained his ship, and (as it fell out afterward) presaged an unfortunate event thereby: for this was the last time that ever this Emperour made his returne to Rome: and no sooner was he arrived, but his own souldiours in a mutinie fell upon him and stabbed him to death. And yet it was not long ere the cause of this wonderfull staie of his ship was knowne: for so soon as ever the vessel (and a galliace it was, furnished with five bankes of ores to a side) was perceived alone in the fleete to stand still, presentlie a number of tall fellows leapt out of their ships into the sea to search what the reason might be that it stood not?

and found one of these fishes sticking fast to the very helme: which being reported unto *Caius Caligula*, he fumed and fared as an Emperour, taking great indignation that so small a thing as it, should hold him back perforce, and check the strength of all his mariners, notwithstanding there were no fewer than foure hundred lustie men in his galley that laboured at the ore all that ever they could to the contrarie. But this prince (as it is for certain knowne) was most astonied at this, namely, that the fish sticking only to the ship, should hold it fast; and the same being brought into the ship and there laid, not worke the like effect. They who at that time and afterward saw the fish, report that it resembled for all the world a snaile of the greatest making: but as touching the form and sundrie kinds thereof, many have written diversly, whose opinions I have set downe in my treatise of living creatures belonging to the waters, and namely in the particular discourse of this fish: neither doe I doubt but all the sorte of fishes are able to doe as much: for this we are to beleeve, that Pourcellans also be of the same vertue, since it was well knowne by a notorious example, that one of them did the like by a ship sent from *Periander* to the cape of Gnidos: in regard whereof, the inhabitants of Gnidos doe honour and consecrat the said Porcellane within their temples of *Venus*. Some of our Latin writers do call the said fish that thus staieth a ship, by the name of Remora."

The real fact is, that the Remora, being a fish of very weak powers of fin, takes the advantage of occasionally attaching itself to any large swimming body, whether animate or inanimate, which it happens to encounter; adhering to ships, as well as whales, sharks, and many other of the larger fishes: it has even been observed by Commerson, that the Remora is so ill calculated for supporting a long and laborious course in the water, that when left to its own exertions, it generally swims on its back, and that in an unsteady and feeble manner. It is therefore necessary that it should avail itself of the occasional assistance of some larger floating body. For this purpose the upper part of the head is wonderfully constituted; presenting a large, flat, oval shield or area, traversed by numerous dissepiments or partitions, each of which is fringed at the edge by a row of very numerous perpendicular teeth or filaments, while the whole area or oval space is strengthened by a longitudinal division or septum. So strong is the power of adhesion which the fish by this apparatus is enabled to exert, that we are assured by Commerson, whose observations on this subject are detailed by Cepede, that, on applying his thumb to the shield of a living Remora, it was affected not only with a strong stupor, but even with a kind of paralysis, which continued for a considerable time after withdrawing his hand. When attached, as is frequently the case, to the skin of a shark or other large fish, it quits not its hold when the former

is drawn out of the water, but continues adhering after the death of the animal; nor is it easy for the strongest arm to effect its separation, unless it be pulled in a lateral direction, so as to force it to slide along the surface of the skin. When a great many of these fishes are thus adhering at once to the sides of a ship, they may in some degree retard its motion, by preventing its easy passage through the water, in the same manner as any other extraneous substances are known to do; nor can it be thought improbable that the adhesion of these fishes in considerable numbers to the side of a small canoe in the earlier ages of mankind, may have operated still more powerfully, and not only have impeded its progress, but even have caused it to incline towards one side; and the tale once related, might have gradually grown into the exaggerated powers afterwards ascribed to the animal.

A second reason of the Remora's thus attaching itself to the larger fishes and to vessels is, that it may be in readiness to avail itself of the occasional remains of the prey of the former, or of the offals thrown out from the latter; being naturally voracious, and by no means delicate in its choice, and frequently following vessels in great numbers in order to obtain occasional supplies of food. The Remora also, especially in stormy weather, adheres to rocks, like the Lump-Fish and some others.

The Remora is principally an inhabitant of the Mediterranean and Atlantic seas. Its general co-

lour is an uniform brown without any material difference of shade either on the upper or lower surface. It sometimes however varies in colour, and Commerson assures us that when a great number of these fishes are attached either to the side of a vessel or to a large fish, it is not very uncommon to see one or two which differ from the rest in being of a whitish colour. The skin is smooth and destitute of scales, but marked with numerous impressed points or pores: the mouth is large, and furnished with very numerous small teeth; and the lower jaw is rather longer than the upper: the eyes are small, with yellow irides: the lateral line commences above the pectoral fins, and from thence pretty suddenly descending, runs strait in the tail, which is of a slightly forked, or rather lunated form. The number of transverse divisions on the shield of this species varies from sixteen to twenty, but the most general number is eighteen. The fish grows to the length of about eighteen inches.

INDIAN REMORA.

Echeneis Neucrates. *E. olivacea, subtus albida, striis capitis viginti quatuor, cauda integra.*

Olive-green Remora, whitish beneath, with twenty-four bars on the head, and ovate tail.

E. Neucrates. *E. cauda integrâ, striis capitis 24. Lin. Syst. Nat. p.* 446.

Iperuquiba et Piraqueba Brasiliensibus. *Marcgr. bras. p.* 180.

Echeneis cauda rotundata. *Bloch. t.* 171.

This species may be easily distinguished from the preceding by its more lengthened or slender shape, as well as by the different form of the tail, which is ovate instead of crescent-shaped. It also differs from the former in its colours; the upper parts of the body being olive-green, and the under parts whitish: the fins are yellowish brown, with dusky edges. In its habits it resembles the preceding species, but is more frequently seen in the Indian and American seas than in those of Europe. The Count de Cepede informs us, from the manuscripts of Commerson, that it is also very common about the coasts of Mozambique, where it is sometimes made use of for the following very singular manner of catching turtles. A ring is fastened round the tail of the fish, in such a manner as to prevent its escape, and a long cord fastened to the ring. When thus prepared, the fish is carried in a vessel of sea-water, and when the boatmen observe a turtle sleeping, as is the frequent custom of those ani-

mals, on the surface of the water, they approach as near as possible without disturbing it; and then, throwing the Remora into the sea, and giving it the proper length of cord, it soon attaches itself to the breast of the sleeping turtle, which is thus easily drawn to the boat by the fishermen. If we may depend on the accuracy of this description, it seems to give some degree of confirmation to a mode of fishing recorded by Aldrovandus and others, in which a fish of a very unusual form, and which seems to be not very distinctly described, is said to be employed in a similar manner by the American Indians, and to be naturally furnished with a large pouch at its head, with which it seizes and draws up its prey.

This species is said to arrive at a much larger size than the preceding; being found of the length of two or three feet, and even, according to a description quoted by Dr. Bloch, to that of seven feet. The usual number of divisions on its shield is from twenty-two to twenty-four.

LINEATED REMORA.

Echeneis Lineata. *E. cauda cuneata, striis capitis decem, lineis albis utrinque duabus longitudinalibus. Menz. Lin. Trans.* 1. *p.* 187. *pl.* 17. *f.* 1.

Remora with cuneated tail, ten streaks on the shield, and two longitudinal white lines on each side of the body.

THIS species is an inhabitant of the Pacific ocean, and is thus described by Mr. Archibald Menzies, in the first volume of the transactions of the Linnæan Society.

" The body of this fish is about five inches long, subulate, smooth, and of a dark brown colour, dotted all over with minute darker spots, and ornamented with two whitish longitudinal lines on each side, which begin at the eyes, and end in the tail; the under mandible is a little longer than the upper, and both are furnished with minute teeth: the clypeus on the top of the head has but ten transverse streaks, which is the chief distinction of this species."

In its general proportions this fish approaches very near to the E. Neucrates, but seems to be a truly distinct species; differing not only in the white lines along the body, but much more remarkably, in the far smaller number of divisions on the shield, which, in a young specimen of the E. Neucrates, I have observed to be as numerous as in the more advanced animal. The specimen described by Mr. Menzies was found adhering to a turtle.

CORYPHÆNA. CORYPHENE.

Generic Character.

Caput maxime truncato-declive.	*Head* sloping suddenly downwards.
Membr. branch. radiis quinque.	*Gill-membrane* five-rayed.
Pinna dorsalis longitudine dorsi.	*Dorsal fin* the length of the back.

COMMON CORYPHENE.

Coryphæna Hippurus. *C. viridi-cærulea, aurantio-maculata, radiis dorsalibus sexaginta, cauda furcata.*

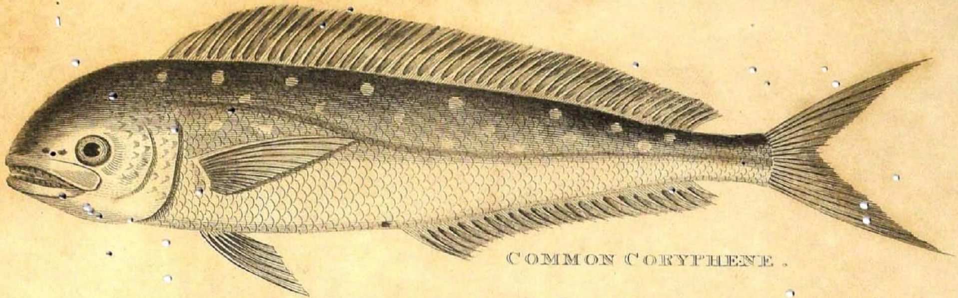
Blue-green Coryphene, with orange-coloured spots, sixty rays in the dorsal fin, and forked tail.

Coryphæna Hippurus. *C. cauda bifida, radiis dorsalibus sexaginta. Lin. Syst. Nat.* p. 446.

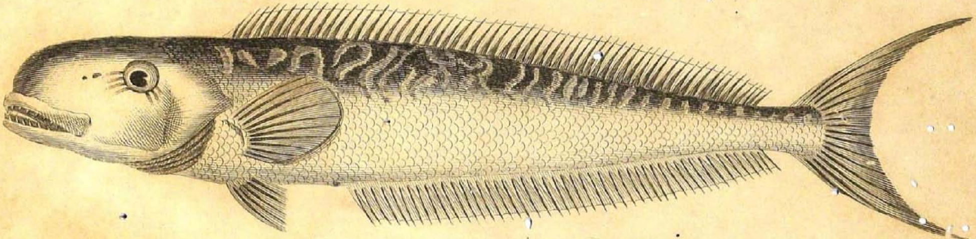
Coryphæna Hippurus. *C. pinna ani radiis viginti quinque. Bloch. pl.* 174.

Hippurus. *Gesn. Rondel. Aldr. Will. &c.*

THE genus Coryphæna is, in general, distinguished by a peculiar splendor of appearance most of the species being of highly vivid and elegant colours. The common Coryphene (popularly known by the name of Dolphin) is an inhabitant of the mediterranean, Indian and Atlantic seas, where it often appears in large shoals, and is sometimes observed to follow ships, devouring with



COMMON CORYPHENE.



Heath sculp.

PLUMIER'S CORYPHENE.

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avidity any occasional articles of food which may happen to be thrown over-board: it will even swallow substances of a very different nature; and we are informed, on the authority of Plumier, that in the stomach of a Coryphene which he examined, were found four iron nails, one of which measured more than five inches. The general length of the common Coryphene is about three feet; but it is often seen of four or even five feet in length: its colour is a bright and beautiful blue-green, accompanied by golden gloss, gradually altering into a silvery cast as it approaches the abdomen: the upper parts are marked by pretty numerous round orange-coloured spots: the head is large, but short and compressed; the lips strong, the mouth wide, and armed with four rows of small curved teeth: the scales are of moderate size, and the whole body is of a compressed form: the fins are green with a tinge of yellow on the rays: the dorsal fin is continued throughout the whole length of the back. When taken out of the water, the beautiful combination of colours fades as the fish expires; the lustre vanishing by degrees, with partial restorations, till at length it becomes of a dull greyish or cinereous cast, without any remains of its former splendor. This gradual evanescence of colour in the dying Coryphene is contemplated by sailors with as much delight as the ancient Romans are said to have exhibited on viewing similar changes in the expiring Mullet, when brought to their tables before the feast began.

The Coryphene is a fish of a very strong and

vigorous nature, swims with great rapidity, is extremely voracious, and is observed to be perpetually engaged in the pursuit of the smaller fishes: it is considered as one of the most cruel persecutors of the flying-fish (Exocoetus), which, in order to avoid its pursuit, avails itself of its power of temporary flight, or rather of springing at once to a considerable distance over the surface of the water; in which action however it is often observed to fall a prey to some of the larger gulls, who seize it during its passage. The flesh of the Coryphene is said to be excellent, and it is therefore often taken both by the line and net. It is observed to frequent the shores in spring and autumn in order to deposit its spawn, and sometimes approaches the mouths of the large rivers: the young are said to be of uncommonly quick growth, as is proved from observations made on such as have been kept in reservoirs for any length of time.

BRASILIAN CORYPHENE.

Coryphæna Equiselis. *C. viridi-aurea, cauda bifurca, radiis dorsalibus quinquaginta tribus.*

Golden-green Coryphene, with forked tail, and fifty-three rays in the dorsal fin.

Coryphæna Equiselis. *C. cauda bifurca, radiis dorsalibus quinquaginta tribus. Lin. Syst. Nat. p.* 447.

Guaracapema. *Marcgr. bras. p.* 160.

This species is so nearly allied to the former that it has been sometimes considered rather as a variety

than truly distinct. It seems to have been first described by Marcgrave, who informs us that it is known to the Brasilians by the name of *Guaracapema*, that it grows to the length of six or seven feet, and is of a silvery green colour on the head and upper parts, variegated with numerous blue spots of different sizes, but all rather small than large, and that the belly is of a whitish colour. He adds that it is a very swift swimmer, and is considered as an excellent fish for the table.

PLUMIER'S CORYPHENE.

Coryphæna Plumieri. *C. subfusca, lineis curvis cæruleis variata, subtus argentea, cauda lunata.*

Brownish Coryphene, variegated with curved blue lines; beneath silvery, with crescent-shaped tail.

Coryphæna Plumieri. *C. pinnæ analis radiis quinquaginta quinque. Lin. Syst. Nat. Gmel. p.* 1191. *Bloch. pl.* 175.

This elegant species takes its title from the celebrated Father Plumier, who appears to have been its first describer. It is a native of the American seas, and in its general form is much allied to the common Coryphene, but the head is longer in proportion: the general colour of the fish is bright yellow, with a silvery cast on the abdomen; while the back is brown, variegated with pretty numerous and somewhat irregular blue streaks, forming so many transverse bars on that part of the animal: the fins are yellow, the tail crescent-shaped and

edged with blue: the whole body is covered with moderately large scales, none being visible on the head. The specimen figured in the manuscripts of Plumier measured about eighteen inches in length, but the fish probably grows to a much larger size.

BLUE CORYPHENE.

Coryphæna Cærulea. *C. tota cærulea, squamis magnis, cauda lunata.*

Blue Coryphene, with large scales, and crescent-shaped tail.

Coryphæna cærulea. *C. tota cærulea. Lin. Syst. Nat. Gmel.* 1191. *Bloch. pl.* 148.

Novacula cærulea. *Catesb. car.* 2. *pl.* 18.

This is a native of the American seas, and is easily distinguished from most other species by its uniform blue colour, as well as by its great depth or breadth of body and the superior size of its scales: the head is very large, but short, and is covered with smaller scales than those of the body. It is found of the length of eighteen inches or two feet, and may probably grow to a much larger size. In its manner of living it resembles the rest of the genus. It appears to have been first described aud figured by Plumier, in whose manuscripts occurred the representation given by Dr. Bloch, and repeated in the present work. It is also tolerably well represented by Catesby in his Natural History of Carolina.

RAZOR CORYPHENE.

Coryphæna Novacula. *C. rufo-flavescens, capite pinnaque anali lineis cæruleis cancellatis.*

Reddish yellow Coryphene, with the head and vent-fin cancellated with blue lines.

Novacula piscis Rondeletii. *Will. p.* 2:4. *t.* O. 2. *Pesce Pettina. Salv.*

This, according to Salvian, its most accurate describer, is a small species, scarcely exceeding a palm in length: the head is very large and compressed, as is the whole body, rising into an edge both above and below: the mouth is rather small, and furnished with small and very sharp teeth, and with four larger ones in front: the eyes are small, and situated on the upper part of the head: the dorsal fin, which is of moderate breadth, commences from the back of the head, and is continued nearly to the tail: the vent is placed nearer the head than the tail, and from it is continued the vent fin, which terminates, like the dorsal, at a small distance from the base of the tail: the tail itself is broad, and nearly even at the end: the head, jaws, and gill-covers, are marked by numerous blue lines; while the anal fin and tail are beautifully variegated by a kind of cancellated alternation of green and yellowish lines: the dorsal fin is red, and marked with a few scattered blue spots: the rest of the animal is of a reddish yellow colour, and in habit resembles the C. Cærulea, being very deep in proportion to its length. It is a native of

the Mediterranean, where it chiefly frequents the shores, feeding on the smaller fishes and sea-insects, and is numbered among the superior kinds of edible fish.

FIVE-SPOTTED CORYPHENE.

Coryphæna Quinque-maculata. *C. subfusca, subtus argentea, maculis utrinque versus caput quinis nigris.*

Brownish Coryphene, silvery beneath, with five black spots on each side towards the head.

Coryphæna pentadactyla. *C. maculis nigris quinis versus caput longitudinalibus. Lin. Syst. Nat. p.* 447. *Bloch. pl.* 173.

The five-spotted Coryphene is a native of the Indian seas, and is of similar habit with the preceding, having a large abrupt head, and being very deep in proportion to its length, as well as greatly compressed on the sides: the mouth is of moderate width, and each jaw is furnished with a row of sharp teeth, with two larger ones in front: both head and body are covered with middle-sized scales, and a small distance beyond the eyes, on each side, are five black round and slightly ocellated spots in a longitudinal direction. The usual length of this species is about twelve inches. It is of a gregarious nature, and is said to assemble in such vast shoals about the Molucca islands, that it furnishes a branch of commerce among those people almost as important as that of the Cod-fishery among the Europeans.

GILT-TAIL CORYPHENE.

Coryphæna Chrysurus. *C. aurea, corpore maculis parvis cæruleis variato.*

Gold-yellow Coryphene, with the body besprinkled with small blue spots.

Le Coryphene Chrysure. *Cepede. 3. p. 186.*

Observed by Commerson in the equatorial parts of the Pacific, and described, from his manuscripts, by Cepede. Greatly allied in general appearance to the common Coryphene, but is of a more compressed and lengthened form, and differs in the number and disposition of the teeth, which are very small, short, and sharp, and stand separate from each other: the mouth also is much less wide: the general or ground colour of the animal is bright gold, the tail exceeding the other parts in brilliancy: on the throat and breast is a gloss of silver, and on the back are a few blueish clouds: the fins are tinged with blue, and the whole body is sprinkled over with lenticular bright blue spots. In its manners this elegant species resembles the common Coryphene, and is of equal excellence as an article of food.

STRIPED CORYPHENE.

Coryphæna Pompilus. *C. dorso supra lineam curvam fasciolis flavescentibus picto. Lin. Syst. Nat. p. 447.*

Coryphene with the body marked by transverse yellowish stripes over the curved lateral line.

Coryphæna cauda æquali, linea laterali curva. *Artedi gen. 16. syn. 29.*

This species is thicker and shorter in proportion than the common Coryphene, with a smaller head and wider mouth: the lower mandible is longer than the upper, and the sides of the head are marked by several small cavities or impressed spots. the lateral line is curved; the pectoral fins very sharp-pointed, and the tail but slightly lunated: over each eye is a gold-coloured spot, and the sides of the body are marked by numerous transverse narrow bands of a similar hue. Native of the Mediterranean and Atlantic seas, where it is said occasionally to accompany vessels in the manner of the common Coryphene.

PARROT CORYPHENE.

Coryphæna Psittacus. *C. capite variegato, corpore macula versicolori rhombea.*

Coryphene with variegated head, and body marked by a variously coloured rhomboid spot.

Coryphæna Psittacus. *C. linea laterali intercepta, pinnis longitudinalibus colore lineatis. Lin. Syst. Nat. p.* 448.

Observed by Dr. Garden in the American seas: head beautifully variegated: irides flame-colour edged with blue: on the middle of the body towards the back a rhomboid purple spot, accompanied by green, yellow, and blue variegations: vent in the middle of the body: dorsal and anal fin linear; the former commencing from the head and reaching, like the vent fin, to the tail, which is even at the end: the beautiful colours of this species, like those of the common Coryphene, are observed to vanish as the fish expires.

MACKREL CORYPHENE.

Coryhpæna Scomberoides. *C. argentea, dorso subcæruleo, pinna dorsali analique versus caudam sinuatis.*

Silvery Coryphene, with bluish back, and the dorsal and anal fin sinuated towards the tail.

Le Coryphene scomberoïde. *Cepede* 3. *p.* 192.

Described by Cepede from the manuscripts of Commerson, who observed it in the South seas. Size between that of a Mackrel and a Herring:

colour bright silver, tinged with brownish blue on the back, and with a deeper cast of the same on the top of the head, where it is accompanied by a gilded tinge: all the fins are entirely brown except the ventral, which are white on the exterior sides, while the pectoral are slightly gilt: the lower jaw is longer than the upper, and both are beset with such a number of small teeth in a reversed direction, that the fish may be suspended by introducing the tip of the finger into the mouth: the tongue is large, and shaped somewhat like the human nail; and on its middle is a squarish rough bone: the gill-covers consist of two large, smooth, and rounded laminæ: the lateral line is marked by several undulations, which decrease as they approach the tail: the ventral fins are united at their base by a membrane communicating with a longitudinal furrow beneath the belly, and in which the animal can at pleasure conceal them: they consist each of five or six rays: the dorsal fin reaches from the back of the head to the tail, and is scalloped towards that part, so as to bear a resemblance to the small or spurious fins in the Mackrel tribe: the vent fin is of similar structure: the lower part of the tail is bounded by a sharp carina. Vast multitudes of these fishes were observed by Commerson to follow the French ships for many days together: they appeared to prey chiefly on young flying-fishes, which at intervals sprang around the ships like so many butterflies, which they scarcely surpassed in size.

UNDULATED CORYPHENE.

Coryphæna Fasciolata. *C. lacteo-argentea, circulis transversis fuscis a fasciis pinnæ dorsalis super latera defluentibus.*

Silvery-white Coryphene, with transverse brown circles descending on the body from the bands of the dorsal fin.

Coryphæna fasciolata. *C. lacteo-argentea, circulis transversis fuscis a fasciis pinnæ dorsalis defluentibus, in dorso passim cohærentibus, in ventre evanidis. Lin. Syst. Nat. Gmel.* p. 1193. *Pall. sp. zool.* 8.

Described by Dr. Pallas: length about two inches: colour silvery white, with several transverse brown circular marks descending on each side the body from the back fin, and gradually losing themselves in the whiteness of the sides: head conical, flat above: eyes large: irides gold-coloured: mouth wide: tongue flat, round, and smooth: opening of the gill-covers very large: gill-covers consisting of two rounded laminæ: lateral line strait: pectoral and ventral fins hyaline; dorsal and anal variegated by dusky bands: tail deeply forked, and marked by a dusky crescent. Native of the seas about Amboina. Perhaps not arrived at its full size. In the dorsal fin are fifty-four rays.

SAILING CORYPHENE.

Coryphæna Velifera. *C. ex cinereo-argentea, pinna dorsali & anali maximis, ventralibus minimis. Lin. Syst. Nat. Gmel. p.* 1193. *Pall. sp. zool.* 8.

Silvery-grey Coryphene, with the dorsal and anal fin very large, and the ventral fins very small.

A SMALL species, described by Dr. Pallas. Native of the Indian seas: colour silvery grey; body gradually tapering to the tail, and covered by eleven longitudinal rows of rather large, thin, slightly striated scales, each of which is marked at the base by a small recumbent spine, and is emarginated at the tip: dorsal and anal fins very large; ventral very small: in the dorsal fin are fifty-five rays.

LINEATED CORYPHENE.

Coryphæna Lineata. *C. capite picto lineis transversis coloratis. Lin. Syst. Nat. Gmel. p.* 1195.

Coryphene with the head variegated with transverse, coloured stripes.

NATIVE of the American seas, observed by Dr. Garden: size not mentioned: head naked, compressed: two sharp front teeth longer than the rest in both jaws: head, dorsal and anal fin marked by coloured streaks: tail rounded: body covered with large scales.

JAPANESE CORYPHENE.

Coryphæna Japonica. *C. lutea, branchiarum apertura rima transversa. Lin. Syst. Nat. Gmel. p.* 1194. *Houtuyn act. Haarl.* 20. *p.* 315.

Deep-yellow Coryphene, with the bronchial aperture transverse.

Length about six inches: colour deep yellow, scales moderately small and tender: described by Houttuyn in the Haarlem Transactions. Native of the Japanese seas. The dorsal fin has twenty-four rays.

GREENISH CORYPHENE.

Coryphæna Virens. *C. virens, pinnis appendiculis filiformibus.*

Greenish Coryphene with filiform appendages to the fins.

Coryphæna virens. *C. pinnis appendiculis filiformibus. Lin. Syst. Nat. Gmel. p.* 1194.

General colour greenish: dorsal and anal fin terminated by a lengthened filiform process: native of the Indian seas: the dorsal fin has twenty-six rays.

CHINESE CORYPHENE.

Coryphæna Sinensis. *C. viridi-argentea, pinna anali brevissima.*
Silvery-green Coryphene, with very short vent fin.
Le Coryphene Chinois. *Cepede 3. p.* 209.

THIS is described by the Count de Cepede merely on the authority of a Chinese drawing, and is said to be of a green colour, more or less deep on different parts of the body, and accompanied here and there by a gloss of silver: the dorsal fin is very long, but the vent fin very short; and the tail is of a rounded shape: the body, gill-covers, and tail, are covered with large scales: the lower jaw is longer than the upper, and turns upward in a slight degree.

The volume of Chinese drawings from whence this species is described made a part of the collection of the Prince of Orange, lately ceded to France, and at present in the national museum.

FLAT-SNOUTED CORYPHENE.

Coryphæna Sima. *C. cauda integra, labio inferiore longiore. Lin. Syst. Nat. Gmel. p.* 1194.
Coryphene with the lower lip longer than the upper, and even tail.

SIZE uncertain: native of the Indian seas: in the dorsal fin are thirty-two rays.

SHARP-TAILED CORYPHENE.

Coryphæna Acuta. *C. cauda acuminata, linea laterali convexa. Lin. Syst. Nat. Gmel. p.* 1194.
Coryphene with sharp-pointed tail, and convex lateral line.

SIZE uncertain: native of the Indian seas. In the dorsal fin are forty-five rays.

HALF-FINNED CORYPHENE.

Coryphæna Hemiptera. *C. maxillis subæqualibus, pinna dorsali brevi. Lin. Syst. Nat. Gmel. p.* 1194.
Coryphene with nearly equal jaws, and short dorsal fin.

AN uncertain species; native of the Indian seas. The dorsal fin has but fourteen rays.

BRANCHIOSTEGOUS CORYPHENE.

Coryphæna Branchiostega. *C. apertura branchiarum transversa. Lin. Syst. Nat. Gmel. p.* 1194.
Coryphene with the branchial aperture transverse.

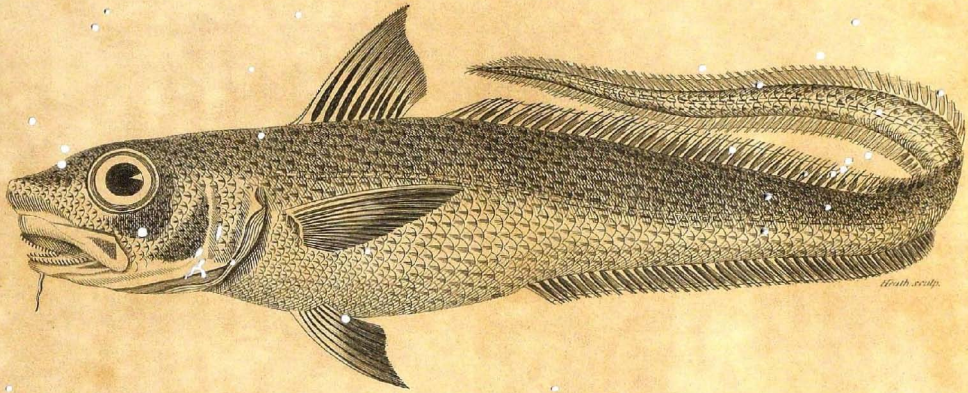
ALLIED to the C. Japonica. Native of the Indian seas. In the dorsal fin are twenty-four rays.

CLYPEATED CORYPHENE.

Coryphæna Clypeata. *C. lamina ossea inter oculos. Lin. Syst. Nat. Gmel. p.* 1195.

Coryphene with a bony plate between the eyes.

This species, which seems at present but obscurely known, is said to be distinguished by a long bony process or lamina situated between the eyes, and is a native of the Indian seas: the dorsal fin has thirty-two rays; the pectoral fourteen; the ventral five; the anal twelve, and the caudal seven.



LONG-TAILED IMMINSET.

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MACROURUS. IMMINSET.

Generic Character.

Caput grande: oculi magni. *Corpus* postice attenuatum in caudam.	*Head* large: eyes large. *Body* at the hind part attenuated into the tail.

LONG-TAILED IMMINSET.

Macrourus Rupestris. *M. argenteo-cinereus, squamis carinatis, pinnæ dorsalis prioris radio primo retro-dentato.*

Silvery-grey Imminset, with carinated scales, and the first ray of the first dorsal fin toothed at the back.

Macrourus ruspestris. *Bloch. pl.* 177.

Coryphæna rupestris. *C. dorso dipterygio, pinnæ dorsalis primæ radio primo retro-dentato. Lin. Syst. Nat. Gmel. p.* 195. *Mull. prodr. zool. Dan. p.* 43.

THE head of this remarkable fish is large and thick; the upper jaw projecting above into the form of an obtuse snout: the eyes are very large: the mouth wide, with five rows of small, curved teeth in the upper jaw, and two rows in the lower: the tongue white, thick, short, and cartilaginous: beneath the tip of the lower jaw hangs a beard or cirrus: the body gradually tapers from the middle part, and at length is continued into a very long, slender, and pointed tail: the whole fish is covered with moderately large, rounded scales, each of

which is furnished in the middle with a strong, toothed carina, ending in a pointed tip: this causes a remarkable roughness of surface; so that the hand is wounded by drawing it over the fish from the tail towards the head: the carinæ of the scales are much stronger on the head than on other parts: the first dorsal fin is situated near the middle of the back, and is furnished with nine or ten rays, of which the first is very strong, and serrated on the back: the second dorsal fin, which is shallow, commences at a small distance from the first, and running to the tip of the tail, is united with the vent fin, which is in a similar manner continued from the tip of the tail to the vent, near the middle of the body: the pectoral fins are rather small and sharp-pointed: and the ventral are of similar form; the lateral line, which is nearer to the back than to the abdomen, commences at the upper part of the gill-covers, and is from thence continued to the tail: the colour of this fish is a silvery grey, deepest on the upper parts: its usual length is about three feet, but it is occasionally seen of larger size: it is a native of the northern seas, and is mostly seen about the coasts of Greenland and Iceland, and is numbered among the edible fishes of the Greenlanders. It is said to swim very swiftly, and when first taken, to struggle with great violence; endeavouring to defend itself by lashing with its tail; its large eyes projecting at the same time to a surprising degree. It is known in some places by the name of Berg-lax, or Mountain Salmon, and

among the Greenlanders is called Ingminniset*. It was first described by Egede in his natural history of Greenland in the year 1741, and has by some naturalists been considered as a species of Coryphene.

* It is from this word, with a slight alteration in the spelling, that the English generic name has been taken.

GOBIUS. GOBY.

Generic Character.

Caput parvum: Oculi approximati.	*Head* small: Eyes approximated.
Membrana branch. radiis quatuor.	*Gill-Membrane* four-rayed.
Pinnæ ventrales unitæ in cavam.	*Ventral fins* united into the form of a funnel.

COMMON GOBY.

Gobius Niger. *G. albido nigroque varius, pinna dorsali secunda radiis quatuordecim.*

Goby with black and whitish variegations, and about fourteen rays on the second dorsal fin.

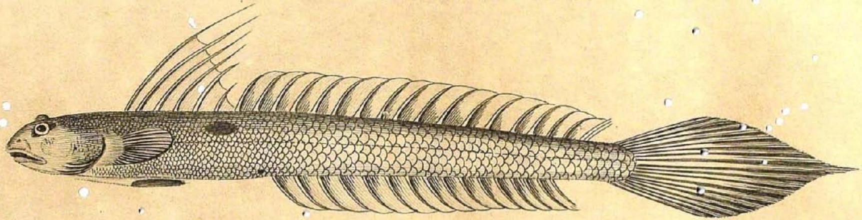
Gobius niger. *G. pinna dorsali secunda radiis quatuordecim. Lin. Syst. Nat. p.* 449.

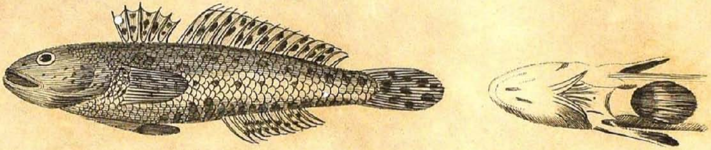
Gobius ex albo & fusco varius, pinnæ dorsi secundæ radiis sedecim. *Bloch. pl.* 38.

Black Goby. *Penn. Brit. Zool.* 3.

THIS species grows to the length of six inches: the body is soft, slippery, and of a slender form: the head rather large: the cheeks inflated: the teeth small, and disposed in two rows: from the head to the first dorsal fin is a small furrow: the first dorsal fin consists of six rays: the second according to Linnæus, of fourteen, and according to Dr. Bloch, of sixteen: the pectoral of sixteen or seventeen,

LANCE-TAILED GOBY.





Hill sculp.

COMMON GOBY.

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closely set together, and the middlemost the longest: the others on each side gradually shorter: the ventral fins coalesce, and form a sort of funnel, by which these fish are said to affix themselves immoveably to the rocks; for which reason they are called by the name of *Rock-Fish;* the tail is rounded at the end: the general colour of the fish is dusky or blackish; but this, on close inspection, is owing to numerous small dusky or blackish specks, accompanied by brown or olive coloured bars and clouds disposed on a whitish ground: the dorsal and anal fins are of a pale blue; the rays marked with minute black spots. This fish is a native of the mediterranean and northern seas, and sometimes enters the mouths of the larger rivers, particularly in the beginning of summer, at which season it deposits its spawn on stones near the shores. It is in the number of edible fish, but is in no particular estimation.

LANCE-TAILED GOBY.

Gobius Lanceolatus. *G. fusco-flavescens, squamis versus caudam majoribus, cauda elongato-acuminata.*

Yellowish brown Goby, with the scales increasing in size towards the tail, which is large, elongated, and sharp-pointed.

Gobius lanceolatus. *G. cauda longissima acuminata. Bloch. t.* 38. *f.* 1. *Lin. Syst. Nat. Gmel. p.* 1203.

THIS species is distinguished by the peculiar form of its tail, which is large in proportion to the animal, and sharp pointed at the tip: the body is

of a lengthened shape, and nearly of equal diameter throughout: the head is oblong, and truncated in front; the jaws of equal length, and armed with sharp teeth: the gill-covers consist of two small laminæ, and the opening of the gills is large: the vent is situated much nearer the head than the tail: the body is covered with scales, of which those toward the tail are much larger than those on the upper parts. This is a West-Indian species, it is found in the rivers of Martinique and some other islands.

BOSCIAN GOBY.

Gobius Boscii. *G. cinereus, fusco-punctatus, fasciis septem transversis albidis.*

Grey Goby, speckled with brown, and marked by seven whitish transverse bands.

Le Gobie Bosc. *Cepede* 2. *p.* 556. *pl.* 16. *f.* 1.

Native of the American seas, and observed by Bosc in the bay of Charles-Town. Head broader than the body: both jaws of equal length: teeth very small: eyes prominent: nostrils elevated: gill-covers terminating acutely: four first rays of the first dorsal fin prolonged into a small filament: body without scales: general colour grey, spotted with brown, and marked by seven irregular transverse whitish or pale bands, fins brown: length fifty-four millimetres; breadth thirteen. Described by Cepede from the communications of Mr. Bosc.

BLUE GOBY.

Gobius Cæruleus. *G. cœruleus, cauda rubra nigro marginata.*
Blue Goby, with red tail bordered with black.
Le Gobie bleu. *Cepede 2. p. 560.*

Described by Cepede from Commerson. A highly beautiful, though very small species: colour fine blue, rather paler beneath: tail red, with a black border: length about a decimetre: mouth obtuse; teeth in the lower jaw sharp, and rather longer than those of the upper: eyes rather more distant than in others of the genus: body covered with small rough scales: first dorsal fin triangular, with the rays terminating in lengthened filaments: second dorsal terminated by a ray of twice the length of the rest: vent placed nearly in the middle of the body: tail rounded. Inhabits the seas about the eastern coasts of Africa, where it is used by the negroes as a bait for other fish. From the brilliancy of its colours it appears, when swimming in a calm sea, during a bright sunshine, like a small tube of sapphire, tipped with carbuncle.

BROUSSONET'S GOBY.

Gobius Broussonetii. *G. corpore elongato, compresso, pinna dorsali unica, cauda lanceolata.*

Goby with elongated and compressed body, single dorsal fin, and lanceolate tail.

Le Gobioide Broussonet. *Cepede* 2. *p.* 580. *pl.* 17. *f.* 1.

DESCRIBED by Cepede from a specimen in the Stadtholder's Museum. Body very long, much compressed, and covered with a skin so transparent as to admit a view of the disposition of the muscles: jaws furnished with very small teeth: ventral fins rather long, and by their union forming a deep funnel: dorsal fin single: pectoral fins small and rounded: dorsal and anal pretty wide, and reaching as far as the tail, which is of a lanceolate shape: rays of the dorsal and anal fins project beyond the membrane. Native of the African seas.

SPOTTED GOBY.

Gobius Minutus. *G. albidus, ferrugineo maculatus, oculis cæruleis.*

Whitish Goby with ferruginous spots and blue eyes.

Gobius minutus. *G. albicans, ferrugineo maculatus, radiis dorsalibus & caudalibus ferrugineo obsolete striatis. Lin. Syst. Nat. Gmel. p.* 1199. *Pall. spic. zool.* 8. *p.* 4.

THIS species is a native of the European seas, and, according to Mr. Pennant, frequents the sandy shores of our own island during the summer months:

its length is about three inches: the head flat; the eyes large, and very prominent; with blue irides: the tongue large; and both jaws are furnished with teeth: the first dorsal fin consists of six rays: the second of eleven, and is placed at some distance from the other: the vent fin has eleven rays; the tail is even at the end: the body is of a whitish colour, obscurely spotted with ferruginous, and the rays of the dorsal fins and tail are barred with the same colour.

BLUE-FINNED GOBY.

Gobius Jozo. *G. fuscus, subtus albidus, pinnis subcæruleis, radiis dorsalibus eminentibus setaceis.*

Brown Goby, whitish beneath, with blueish fins, and projecting setaceous dorsal rays.

Gobius Jozo. *G. radiis dorsalibus eminentibus setaceis. Lin. Syst. Nat. p.* 450.

Bloch. t. 107. *f.* 3.

This species grows to the length of four or six inches, and is principally distinguished by the blue colour of its fins, and the streaks on the first dorsal fin: the jaws are of equal length, and armed with small, sharp teeth: the lateral line runs in a strait direction along the middle of the body. It is a native of the Mediterranean and the Baltic, and commonly frequents the muddy shores, living on sea-insects, &c. It deposits its spawn on the soft mud; and though very prolific, is not observed to

be very numerous; owing to the small fry becoming the prey of other fishes: as a food it is held in little or no esteem.

BODDERTIAN GOBY.

Gobius Boddaerti. *G. fusco-cœruleus, subtus gilvus, lateribus fusco maculatis.*

Blueish-brown Goby, buff-coloured beneath, with the sides of the body spotted with brown.

Gobius Boddaerti. *G. pinnæ dorsalis anterioris radiis cirriformibus, tertio longissimo. Lin. Syst. Nat. Gmel.* p. 1201. *Pall. spic. zool.* 8. *p.* 11. *t.* 2. *f.* 4. 5.

Native of the Indian seas: length about five or six inches: colour blueish brown above, and reddish white beneath: head varied with brown and white: lips thick and fleshy: body covered with small scales, and marked above by seven brown spots in a longitudinal direction; beneath which are seven other spots of the same colour but speckled with white: vent surrounded by a black ring, and terminated by a fleshy protuberance: lateral line marked with minute papillæ and snow-white spots: first dorsal fin blackish blue speckled with white, and furnished with long projecting filaments: second dorsal fin traversed by five or six white lines: tail blueish white.

HARE-LIPPED GOBY.

Gobius Lagocephalus. *G. fuscus, labiis emarginatis, superiore crassissimo.*

Brown Goby, with emarginated lips, the upper one very thick.

Gobius lagocephalus. *G. maxilla superiore hemisphærica, lingua lineaque laterali nulla. Lin. Syst. Nat. Gmel. p.* 1202. *Pall. spic. zool.* 8. *p.* 14. *t.* 2. *f.* 6. 7.

Described by Kolreuter in the Petersburgh Transactions. Body round, compressed towards the tail: size of a finger: colour grey or dark brown: covered with minute scales: head short, thick, without scales: mouth transverse; upper jaw very thick; lower with a few larger teeth, which are slightly hooked: lips cleft in the middle, doubled, the upper fleshy and very thick, reaching much beyond the jaw; palate with numerous crowded small teeth on the margin: eyes distant, small, covered with the common skin: rays of the first dorsal fin simple, of the other and the tail branched: tail oval-rounded: pectoral lanceolate-oval: ventral with very short crowded rays: vent in the middle of the body.

PAGANEL GOBY.

Gobius Paganellus. *G. subflavescens, fusco punctatus, pinna dorsali secunda basi subpurpurea, margine lutea.*

Yellowish Goby, speckled with brown, with the second dorsal fin purplish at the base and yellow at the margin.

Gobius Paganellus. *G. pinna caudali dorsalique secunda basi purpurascente, priori linea lutea terminali. Lin. Syst. Nat. p. 449.*

LENGTH from three, or four, to six inches: body rather compressed; general colour white, more or less tinged with yellow, and sometimes with a cast of green: body marked with small blackish spots: first dorsal fin edged with bright yellow: the second dorsal and the anal tinged with purple at the base: tail nearly strait. Native of the Mediterranean, frequenting rocky coasts.

RED-FRONTED GOBY.

Gobius Cruentatus. *G. albidus, fasciis transversis fuscis, capite pinnisque rubro maculatis.*

Whitish Goby, with transverse brown bands; the head and fins spotted with red.

Gobius cruentatus. *G. ore rubro-pustulato, pinnarum dorsalium radiis ultra membranam prominentibus. Lin. Syst. Nat. Gmel. p. 1197.*

NATIVE of the Mediterranean; much allied to the G. Paganellus, but the rays of the dorsal fins project beyond the membrane: mouth, gill-covers,

throat, and most of the fins spotted with red: general colour dull white, with a few transverse brown bands: ventral fins blueish: tail rounded, and marked with obscure blackish bands. This species has been sometimes regarded as a variety of the G. Jozo.

OTAHEITEE GOBY.

Gobius Ocellaris. *G. olivaceus, subtus glaucus, pinna dorsali priore ocello nigro prope basin notata.*

Olivaceous Goby, glaucous beneath, with the first dorsal fin marked towards the base by a black ocellate spot.

Gobius Ocellaris. *G. maxilla superiore longiore, pinna dorsali prima ocellata sexradiata. Lin. Syst. Nat. Gmel. p.* 1204. *Brouss. ichth. dec.* 1. *t.* 2.

Native of the rivulets of Otaheitee. Body compressed lanceolate, covered on the hind part with imbricate ciliate scales, obscurely clouded with olive and black, beneath glaucous. Head a little compressed, subconic, blackish, slightly curved above, obtusely carinate in the middle, beneath strait, flat; eyes looking obliquely upwards, pupil black, iris glaucous; teeth unequal, minute, those of the lower jaw less: lateral line nearly in the middle, strait, obscure; vent placed a little behind: fins generally with divided rays, the connecting membrane diaphanous: pectoral and ventral fins blackish; first dorsal short, with olive and brown undulations, and simple rays, setaceous and recurved at their tips: second dorsal fin long, greenish,

tinged with dull red at the tip; the rays annulated with greenish and brown; the first ray simple: anal fin long, greenish-brown, with transparent tip: tail oval, greenish, with simple rays.

ARABIAN GOBY.

Gobius Arabicus. *G. olivaceus, maculis confluentibus violaceis punctisque cæruleis variatus, radiis dorsalibus quinque elongatis.*

Olivaceous Goby, variegated with confluent violet spots and blue specks, with five of the dorsal rays elongated.

Gobius Arabicus. *G. pinnæ dorsalis primæ radiis quinque posterioribus filo rubro terminatis membrana duplo longioribus. Lin. Syst. Nat. Gmel. p.* 1198. *Forsk. arab. p.* 23.

A SMALL species, about the size of the little finger, and of a greenish brown colour, variegated with numerous violet-coloured spots and blue specks; the violet spots becoming confluent on some parts: the skin is very soft, and covered with extremely small, close-set scales: all the fins are spotted, and the tail is of a cuneated shape. Observed by Forskal in the Arabian seas.

BLACK GOBY.

Gobius Ater. *G. ater, squamis parvis carinatis, genis prominentibus.*
Deep-Black Goby, with small carinated scales; and prominent cheeks.
Le Gobie noir. *Cepede. 2. p. 568.*

Described by Cepede from Commerson: length two or three inches: colour deep black with a blueish or greenish cast: scales very small, carinated: head swelling out on each side: upper lip longer than the lower: teeth small: tongue short and fixed: eyes much approximated: on each side the branchial aperture is a tubercle, and at the vent a small process. Native of the Indian seas; often entering the mouths of small rivers, particularly where there is a muddy bottom: considerably esteemed as a food, and used by convalescents.

BLACK-FINNED GOBY.

Gobius Bicolor. *G. fuscus, pinnis omnibus nigris. Lin. Syst. Nat. Gmel. p.* 1197. *Brünn. pisc. mass. p.* 30.
Brown Goby, with all the fins black.

Native of the Mediterranean: habit of G. Paganellus: length three inches; rays of the fins project in a small degree beyond the connecting membrane.

CLOUDED GOBY.

Gobius Nebulosus. *G. albidus, maculis confluentibus fuscis, squamis magnis rhombeis.*

Whitish Goby, variegated with confluent brown spots, and covered with large rhomboid scales.

Gobius nebulosus. *G. pinnæ dorsalis primæ radio secundo filo membrana duplo longiore nigro terminato. Lin. Syst. Nat. Gmel. p.* 1198. *Forsk. arab. p.* 24.

Observed by Forskal in the Arabian sea. Length three inches: colour whitish, variegated with confluent brown spots: beneath plain: scales large, rhomboid, and rough: pupils of the eyes blueish, irides white: pectoral fins glaucous, variegated at the base by obscure brown spots: ventral fins brownish: dorsal and caudal hyaline, spotted with brown: anal hyaline bordered with brown.

CHINESE GOBY.

Gobius Eleotris. *G. albidus, squamis magnis lævibus, macula prope opercula magna violacea.*

Whitish Goby, with large smooth scales, and a large violet spot near the gill-covers.

Gobius Eleotris. *G. pinna anali radiis novem. Lin. Syst. Nat. p.* 449. *Gobius Chinensis. Osb. it. p.* 260.

Native of China: colour whitish, and covered with large, round, smooth scales: on the back, near the gill-covers, is a large violet-coloured spot: both the dorsal fins are of equal height, and the tail is rounded.

PLUMIER'S GOBY.

Gobius Plumieri. *G. fusco-flavescens, subtus albidus, maxilla superiore prominente.*

Yellowish-brown Goby, whitish beneath, with thick, projecting upper lip.

Gobius Plumieri. *G. maxilla superiore prominente. Lin. Syst. Nat. Gmel. p.* 1203. *Bloch. t.* 178.

NATIVE of the American seas: described by Plumier: length three or four inches: habit plump or fleshy: colour yellowish brown above, yellow on the sides, and white beneath: body covered with small scales: upper lip obtuse and longer than the lower: rays of the first dorsal fin project beyond the membrane: pectoral fins rather large: tail rounded: considerably esteemed as an article of food.

PECTINATED GOBY.

Gobius Pectinirostris. *G. dentibus maxillæ inferioris horizontalibus. Lin. Syst. Nat. p.* 451.

Goby with the teeth of the lower jaw horizontal.

Apocryptes Chinensis. *Osb. it. p.* 130.

NATIVE of China: size rather small: particularly distinguished by the position of its teeth in the lower jaw, which project horizontally in such a manner as to represent a small semicircular comb: in the first dorsal fin are five rays, in the second twenty-six, in the pectoral fins nineteen, in the ventral ten, in the anal twenty-six, and in the tail fifteen.

SCHLOSSERIAN GOBY.

Gobius Schlosseri. *G. nigricans, subtus albidus, capite magno, corpore squamis magnis, coriaceis, rotundatis.*

Blackish Goby, whitish beneath, with large head, and body covered with large, rounded, coriaceous scales.

Gobius Schlosseri. *G. ex fusco nigricans, subtus exalbidus, pinnæ dorsalis primæ radiis spinosis. Lin. Syst. Nat. Gmel.* p. 1201. *Pall. sp. zool.* 8.

This species is a native of the island of Amboina, inhabiting fresh waters, and generally residing on the soft mud, in which it conceals itself on the approach of danger: it is about a span in length, of a somewhat compressed form, and tapering but very slightly towards the tail: the head is longish, and much broader than the body; the eyes protuberant, and placed in front of the head: the body is covered with moderately large, coriaceous, rounded scales, and is of a dusky colour above, and whitish beneath: the pectoral fins are attached, on each side the base, to a kind of fleshy arm or footstalk. According to Cepede the *Gobius barbarus* of Linnæus is in reality no other than the above species: it is thus distinguished in the Systema Naturæ. *G. pinnis pectoralibus flabello insistentibus, pinna dorsali priore radiis 12, posteriore 13.*

EEL GOBY.

Gobius Anguillaris. *G. elongatus fuscus, pinnis rubris, dorsali unica.*

Elongated brown Goby, with red fins; the dorsal single.

Gobius anguillaris. *G. pinna dorsali unica, cauda rubra.* Lin. *Syst. Nat. Gmel.* p. 1201.

This species differs from the generality of the Gobies by its more elongated form, approaching in some degree to that of an eel: the dorsal fin is single, and reaches nearly to the tail, the vent fin being equally extended in the opposite direction: the pectoral fins are very small and rounded: the skin of the body is smooth and slippery; the colour pale brown, and all the fins red. Native of the Chinese coasts. The dorsal fin has fifty-two rays, the pectoral fins twelve, the ventral ten, the anal forty-three, and the tail twelve.

CARP GOBY.

Gobius Cyprinoides. *G. cinereus, corpore cyprinaceo, squamis magnis subciliatis.*

Grey Goby with carp-shaped body, and large subciliated scales.

Gobius cyprinoides. *G. squamis magnis subciliatis vestitus, pinna caudæ rotundata: radiis membrana fusco-tessellata nexis.* Lin. *Syst. Nat. Gmel.* p. 1202. *Pall. sp. zool.* 8. *t.* 1. *f.* 5.

Native of Amboina: length about three inches and a half: habit resembling that of the Carp tribe rather than that of the Gobies: colour grey-brown,

whitish beneath: scales large, and slightly ciliated at the edges: head rather broader than the body, and covered by a soft skin, crossed with very fine lines: teeth small: eyes lateral; between them a blackish, triangular, longitudinal crest, resembling a fin in miniature: behind the vent is a tubular process imbedded in a small channel.

NILOTIC GOBY.

Gobius Aphya. *G. albidus, nigro-punctatus, fasciis pinnarum fuscis.*

Whitish Goby speckled with black; the fins barred with brown.

Gobius Aphya. *G. fasciis etiam pinnarum fuscis. Lin. Syst. Nat.* p. 450.

A very small species, found in the Nile, and in some parts of the Mediterranean sea: length scarce more than an inch: colour whitish varied by a few small black spots: dorsal and anal fin marked by brown bands: eyes very small: the second dorsal fin has seventeen rays.

BLACK-TAILED GOBY.

Gobius Melanurus. *G. pinna dorsali unica, cauda nigra. Lin. Syst. Nat. Gmel.* p. 1201. *Brouss. ichth. dec.* 1.

Goby with single dorsal fin, and black tail.

A small species: sufficiently described by its specific character: native country uncertain.

GOBIOMORUS. GOBIOMORE.

Generic Character.

Habitus generis præcedentis.	*Habit* as in the preceding genus.
Pinnæ ventrales distinctæ.	*Ventral fins* distinct.

THE genus Gobiomorus is instituted by the Count de Cepede, and contains those species which differ from the genuine Gobies in having the ventral fins separate, instead of being united, as in that genus, into the form of a funnel: in the Gmelinian edition of the Systema Naturæ they are associated with the genus Gobius.

SOUTHERN GOBIOMORE.

Gobiomorus Australis. *G. thalassinus, rubro-maculatus, subtus albus, capite flavo pinnis rubro variatis.*

Blue-green Gobiomore with red spots; whitish beneath; the head variegated with yellow, and the fins with red.

Gobius strigatus. *G. pinna ventrali bipartita, dorsali prima sexradiata. Lin. Syst. Nat. Gmel. p.* 1204. *Brouss. ichth. dec.* 1.

Le Gobiomore Taiboa. *Cepede* 2. *p.* 587.

NATIVE of the Southern ocean, and observed about the coasts of Otaheitee: body compressed, much elongated, and covered with squarish scales:

head compressed, but wider than the body: upper jaw rather longer than the lower: teeth unequal; tongue and palate smooth, but the throat roughened by small sharp teeth: first dorsal fin furnished with very long rays: tail large and rounded: colours of the whole animal very elegant; the back being of a blueish green, and the abdomen whitish: the head yellow, varied with green, and marked by dusky streaks and specks: sides of the body varied with reddish spots: dorsal fin transparent, greenish, with red rays and transverse bars: pectoral fins greenish; ventral white; anal green tinged with red: tail yellowish green, with red rays, and marked on each side by a broad, oblique, curved, red stripe.

SLEEPING GOBIOMORE.

Gobiomorus Dormitor. *G. maxilla superiore longiore, cauda rotunda.*

Gobiomore with the upper jaw longer than the lower, and round tail.

Le Gobiomore Dormeur. *Cepede 2. p. 589.*

NATIVE of the fresh-water lakes and rivers of South America: lower jaw longer than the upper: tail very much rounded: eleven rays in the second dorsal fin: eight in the pectoral and anal fins: colour not mentioned by Cepede, who informs us that this species is figured in the drawings of Plumier: supposed to take its name from the slowness of its movements, or want of activity.

GRONOVIAN GOBIOMORE.

Gobiomorus Gronovii. *G. argenteus, corpore scombriformi, dorso subnigro, lateribus nigro-maculatis, cauda furcata.*

Silvery Gobiomore, with mackrel-shaped body, blackish back, sides spotted with black, and forked tail.

Le Gobiomore Gronovien. *Cepede 2. p. 584.*

Gobius Gronovii. *Lin. Syst. Nat. Gmel. p.* 1205.

Described by Gronovius: native of the equatorial parts of the American seas: has some affinity to the genus Scomber: body broad or deep, and of a silvery colour, covered with very small, imbricated scales, and spotted on the sides with black: the back also is of a blackish tinge: the eyes are very large; the mouth small; furnished in both jaws, as well as in the palate, with pretty large teeth: gill-covers roundish; back slightly convex: lateral line following the flexure of the back: vent in the middle of the body.

KOLREUTERIAN GOBIOMORE.

Gobiomorus Kolreuteri. *G. albidus, pinnis ventralibus ovatis, brachio affixis.*

Whitish Gobiomore, with ovate ventral fins affixed to an arm or process.

Gobius Koelreuteri. *G. pinna ventrali bipartita, dorsali prima undecim-radiata. Lin. Syst. Nat. Gmel. p.* 1205. *Pall. sp. zool.* 8. *t.* 2. *f.* 1. 3.

Le Gobiomore Koelreuter. *Cepede* 2. *p.* 590.

Described by Kolreuter in the Petersburgh Transactions. Length about a span: colour greyish

white: allied in habit to the Gobius Schlosseri, having the ventral fins attached to a kind of fleshy arm or process on each side: eyes very much approximated, and situated on the top of the head: lips double and fleshy: teeth unequal and conic: upper jaw furnished on each side with a tooth much longer than the rest: lateral line appearing as if impressed: vent situated towards the middle of the body: tail somewhat lanceolate: first dorsal fin brown, bordered with black: second dorsal fin yellowish, with a longitudinal brown stripe: pectoral fins ovate or fan-shaped: processes on which they are seated very broad.

PISONIAN GOBIOMORE.

Gobiomorus Pisonis. *G. maxilla superiore longiore, pinna dorsali unica.*

Gobiomore with the upper lip longer than the lower, and single dorsal fin.

Gobius Pisonis. *G. pinna ventrali bipartita, maxilla inferiore longiore. Lin. Syst. Nat. Gmel. p.* 1206.

Amore Pixuma. *Pis. bras.* 3. *p.* 72.

Le Gobiomoride Pison. *Cepede* 2. *p.* 593.

A small species, described by Piso in his Natural History of Brasil: lower jaw longer than the upper; and both armed with several rows of pretty strong and sharp teeth: head both compressed and depressed, and covered with scales of nearly similar size with those on the back: tail rounded: dorsal fin single. Cepede places this in a separate genus, which he calls *Gobiomoroides*.

GREAT-HEADED GOBIOMORE.

Gobiomorus Cephalus. *G. rufus, capite magno, oculis cæruleis, pinna dorsali analique caudæ vicinis.*

Rufous Gobiomore, with large, subdepressed head, blue eyes, and dorsal and anal fins placed near the tail.

Le Gobiésoce Testar. *Cepede 2. p. 596.*

NATIVE of the South-American rivers: head very large, rounded in front, and somewhat depressed at the hind part: eyes situated very near each other: lips double and extensile: abdomen very prominent: dorsal fin single, short, and situated near the tail: vent fin placed still nearer the tail, which is very long, and rounded at the tip: general colour bright rufous, deepest on the back: eyes bright blue. Described by Cepede from a drawing by Plumier. Cepede places it in a separate genus under the name of *Gobiesox*, the position of the dorsal and anal fin giving it in some degree the habit of a Pike.

COTTUS. BULLHEAD.

Generic Character.

Caput corpore latius, spinosum: *Oculi* verticales, membrana nictitante instructi.	*Head* broader than the body, spiny: *Eyes* vertical, and furnished with a nictitating membrane.
Membr: branch: radiis sex.	*Gill-membrane* six-rayed.
Corpus (plerisque) alepidotum, versus caudam attenuatum.	*Body* (in most species) without scales, attenuated towards the tail.
Pinnæ dorsales (plerisque) duæ.	*Dorsal fins* (in most species) two.

RIVER BULLHEAD.

Cottus Gobio. *C. lævis olivaceo-flavescens, pigro nariatus, subtus albicans, capite utrinque mucronato.*

Smooth yellowish-olive Bullhead, variegated with black; beneath whitish; the head furnished with a spine on each side.

Cottus-Gobio. *C. lævis, capite spinis duabus. Lin. Syst. Nat. p.* 452.

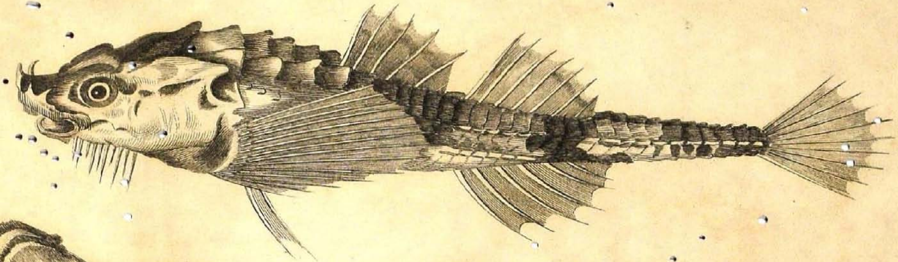
Cottus spinis curvatis duabus ad utrumque operculum. *Bloch. t.* 38.

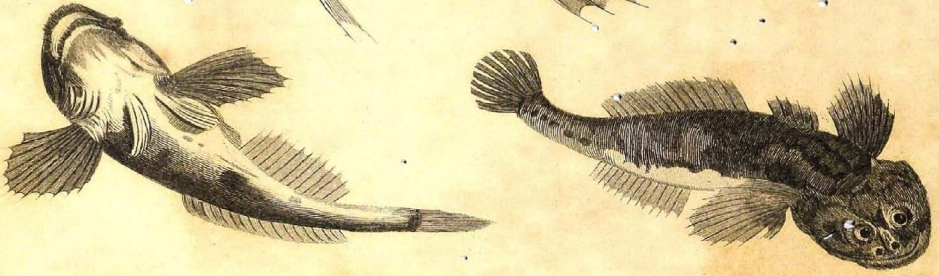
Bullhead, or Miller's Thumb. *Will. itchth.*

River Bullhead. *Penn. Brit. Zool.* 3.

THIS species is an inhabitant of clear brooks and rivers, and is found in most parts of Europe. It generally remains at the bottom; lying on the

MAILED BULL-HEAD.





Heath sculp.

RIVER BULL-HEAD.

1803. July 1 London Publish'd by G. Kearsley, Fleet Street.

gravel, or concealing itself beneath the stones, and preying on worms, water-insects, and very young fishes. It is said to deposit its spawn in a small hollow, which it forms in the gravel, and to quit its charge with great reluctance. Linnæus indeed, in the Systema Naturæ, appears to adopt the old idea of some naturalists; viz. that it will sooner suffer itself to be killed than desert its ova. Dr. Bloch however supposes the notion to be erroneous. In our own country this fish rarely exceeds the length of about three inches and a half; but in other parts of Europe it appears to arrive at a superior size, since the specimen figured by Baron Meidinger, in his descriptions of the fishes of Austria, measures five and a half; and it is even sometimes seen of the length of seven inches. Its general colour is yellowish olive, much deeper on the head and upper parts of the back; and the whole body is more or less clouded and speckled with small dusky variegations: the fins are yellowish, speckled with brown: the pectoral fins large, round, and elegantly indented or scolloped at the edges: they commonly consist of thirteen or fourteen rays; the dorsal of seven; the ventral of only four; the anal of thirteen, and the tail of twelve: the head is large, broad, flat, and rather thin at its circumference, being well adapted, as Mr. Pennant observes, for insinuating itself under stones, &c. On the middle part of the gill-covers is a small but strong spine, turning inwards, near which on each side is a second of much smaller size: the eyes are small; the mouth wide, and furnished with pretty numerous,

minute teeth: the skin of the whole body is smooth and slippery. This fish occasionally swims with great strength and rapidity, when in pursuit of its prey, though its general habit is that of lying in an apparently inert state. Notwithstanding its disagreeable appearance, it is considered as an edible fish, and is even regarded as delicate: the flesh however turns of a red or salmon-colour on boiling, and the fish is admitted only at the tables of those of inferior rank. It usually spawns in the months of March and April.

GRUNTING BULLHEAD.

Cottus Grunniens. *C. fuscus albido-variatus, gula ramentis villosa, corpore nudo.*

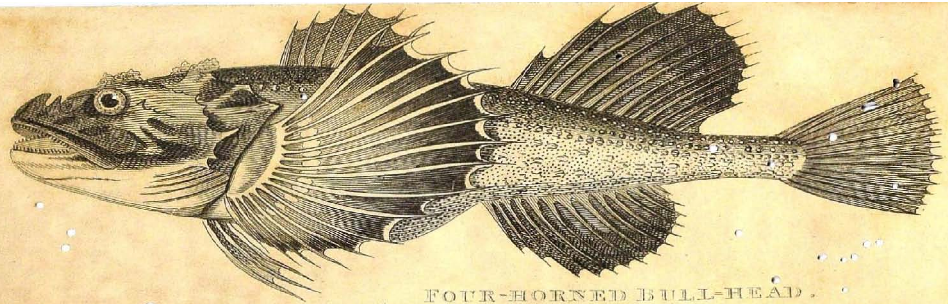
Brown Bullhead, with whitish variegations, naked body, and throat shagged with cirri.

Cottus grunniens. *C. gula ramentis villosa, corpore nudo. Lin. Syst. Nat. p.* 451.

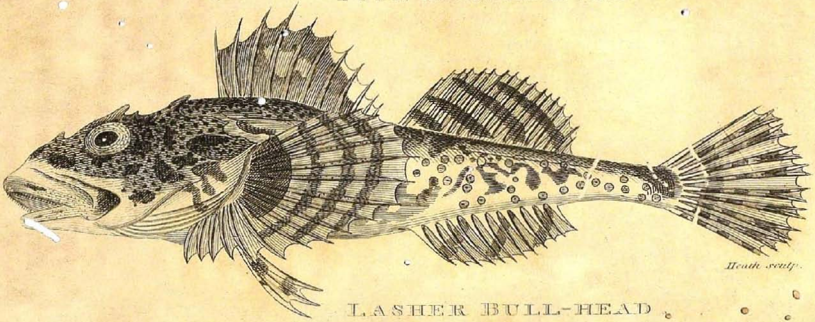
Cottus glaber, maxilla inferiore multum cirrata. *Bloch. t.* 179.

Native of the Indian and American seas: length six or eight inches: colour brown, varied with white on the sides: fins pale, spotted with brown; skin of the whole animal marked by numerous pores, exsuding a mucous fluid, as in most other species: head large; eyes small, mouth very wide; tongue and palate smooth; lower jaw longer than the upper, and furnished with numerous cirri, which appear also on each side the head: lips strong; teeth sharp, distinct, recurved, and placed in several

36.



FOUR-HORNED BULL-HEAD.



Heath sculp.

LASHER BULL-HEAD.

1803. July 1. London Publish'd by G. Kearsley, Fleet Street.

rows: gill-covers consist of a single piece, armed with three or four spines: branchial orifice very wide. This fish, like some of the Gurnards, &c. when first taken, exerts a kind of abrupt sound, resembling in some degree the grunting of a pig, and which is produced, as in the Gurnards, &c. by the sudden expulsion of air from the internal cavities, through the gill-covers and mouth. It is considered as an esculent fish, but the liver is said to be hurtful.

LASHER BULLHEAD.

Cottus Scorpius. *C. fuscus albido-variatus, capite spinis pluribus, maxilla superiore paulo longiore.*

Brown Bullhead, with whitish variegations, several spines on the head, and upper jaw rather longer than the lower.

Cottus Scorpius. *C. capite spinis pluribus, maxilla superiore paulo longiore. Lin. Syst. Nat. p.* 452.

Father-Lasher. *Will. ichth. Penn. Brit. Zool.* 3.

The general length of this fish, in the Mediterranean sea, is about eight or ten inches, but it is said to arrive at a much larger size in the northern seas: the head is very large, and armed with extremely strong, sharp spines, the largest of which are disposed toward the hind part, and the smallest on the fore-part: the mouth is large, and the jaws are beset with rows of very small teeth: in the roof of the mouth is also a triangular patch of minute teeth: the body tapers pretty suddenly towards the tail, and is covered with a smooth, lubricous skin: the colour is brown, marbled with

white variegations, which are sometimes accompanied by a reddish tinge: the belly is entirely white: the fins and tail are transparent, slightly clouded with brown, and the rays barred regularly with deep-brown: the pectoral fins are very large, rounded, and denticulated or scolloped on the edges: the dorsal and anal of moderate size; the ventral small; the tail even at the end: the lateral line is strait, and formed by a train of small scaly points, covered by the common skin.

This fish is an inhabitant of the mediterranean and northern seas, and is said to be particularly plentiful about the coasts of Greenland, where it is much esteemed as a food. It is a strong fish, swimming with great rapidity, and preying on the smaller fishes, sea-insects, &c. It is said to be able to live a considerable time out of water; having the power of closing the gill-covers in such a manner as to exclude the effects of atmospheric air. When first caught, if held in the hand, it exerts a strong and peculiar sound by the expulsion of air through its mouth, &c. during this action the mouth is opened to the utmost width, the pectoral fins are strongly expanded, and the whole body is agitated by a vibrating or tremulous motion.

FOUR-HORNED BULLHEAD.

Cottus Quadricornis. *C. olivaceus, fusco-variatus, subtus albidus, capite verrucis quatuor osseis.*

Olivaceous Bullhead, variegated with brown, whitish beneath, with four bony tubercles on the head.

Cottus quadricornis. *C. capite verrucis quatuor osseis. Lin. Syst. Nat. p.* 451.

Cottus tuberculis quatuor in capite. *Bloch. t.* 108.

Greatly allied in general appearance to the preceding species, but smaller, and marked on the head by four rough, bony tubercles, two of which are situated towards the middle of the head, and two at the back part: colour olivaceous, marbled with brown: beneath whitish: pectoral fins very large, and rounded. Native of the Mediterranean and Baltic, as well as of the northern seas; and in manners similar to the preceding species.

ROUGH BULLHEAD.

Cottus Scaber. *C. subfuscus squamosus, fasciis transversis fuscis, capite striis longitudinalibus serratis, linea laterali aculeata.*

Brownish, scaly Bullhead, with transverse brown bands; head marked with longitudinal serrated streaks; and spiny lateral line.

Cottus scaber. *C. capite striis, corporisque squamis serratis linea laterali elevata. Lin. Syst. Nat. p.* 451.

Cottus linea laterali aculeata. *Bloch. t.* 159.

Native of the Indian seas: habit rather slender: body compressed, of a silvery colour, tinged with

blue on the back, covered with small scales, and surrounded by six or seven moderately broad and distant rufous bands: length about twelve inches: head oblong, roughened in front by four reversed spines, and covered on the sides with small, rough scales: mouth very wide; lower jaw longer than the upper: lateral line marked by a row of spines: fins blueish, spotted on the rays, and variegated on the membranes with brown: pectoral fins rather small.

INSIDIOUS BULLHEAD.

Cottus Insidiator. *C. griseus, fusco-variatus, capite supra lineis acutis, ad latus spinis duabus scabro.*

Grey Bullhead, with brown variegations, head marked above by sharp lines and on each side by two spines.

Cottus Insidiator. *C. capite supra lineis acutis, ad latus spinis duabus scabro. Lin. Syst. Nat. Gmel. p.* 1213. *Forsk. arab. p.* 25.

Allied to the river bullhead, but a much larger species, exceeding the length of a foot. Native of the Arabian seas, where it frequents the coasts, concealing itself under the sand, and springing on such of the smaller fishes as happen to approach its haunts. It is of a depressed form, tapering towards the tail, and is of a greyish colour variegated with dusky clouds and spots: the abdomen is white; the tail whitish, and marked in the middle by a bifid yellow spot accompanied by two unequal, linear, oblique black bars: on the head are spines similar to those of the river bullhead.

MARSEILLES BULLHEAD.

Cottus Massiliensis. *C. capite polyacantho, pinnis dorsalibus coadunatis. Lin. Syst. Nat. Gmel. p.* 1213.
Bullhead with many spines on the head, and united dorsal fins.

This species is much allied to the Cottus Scorpio, but differs in the particulars mentioned in the specific character. It is a native of the Mediterranean, and is said to occur about the coasts of Marseilles.

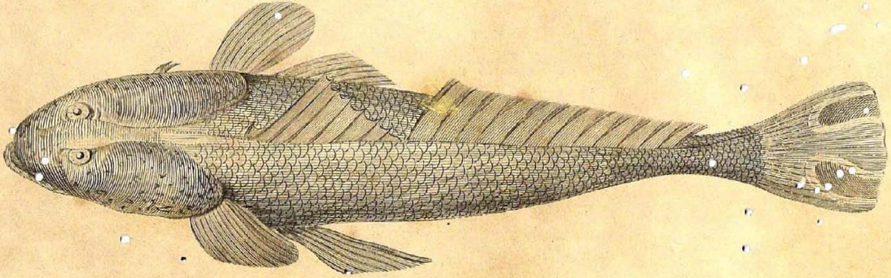
MADAGASCAR BULLHEAD.

Cottus Madagascariensis. *C. squamosus, capite utrinque spinis duabus curvis sulcoque longitudinali medio.*
Scaly Bullhead with two curved spines on each side the head, and a longitudinal middle furrow.
Le Cotte Madégasse. *Cepede* 3. *p.* 248. *pl.* 11.

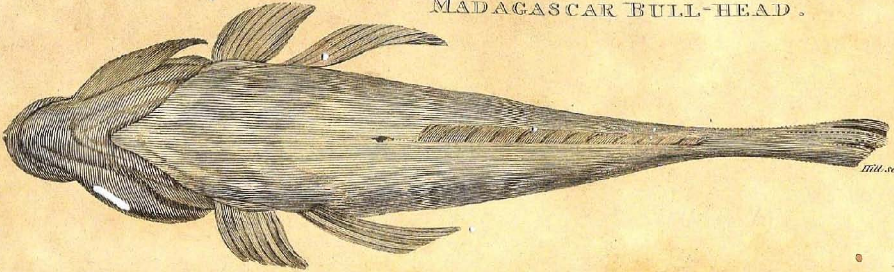
Described by Cepede from the manuscripts of Commerson: allied in some degree to the river Bullhead, but longer in proportion, and of larger size: it is also covered with pretty large scales, and the tail is divided by two indentations into three rounded lobes*: the head is depressed, and

* This circumstance appears rather doubtful; and perhaps the figure of this part, as given by Commerson, and engraved in Cepede's work, may have been meant rather to express two large dusky marks or spots, rather than indentations; especially as it is expressly said by Commerson to be *variegated*.

37.



MADAGASCAR BULL-HEAD.



Hill sculp.

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marked by a deep longitudinal furrow; and on each side the head are two sharp curved spines: the eyes are situated very near each other on the upper part of the head: the pectoral fins are of moderate size and of a rounded form: the colour of this fish is not mentioned. Native of the African seas, and observed by Commerson about the coasts of Madagascar.

BLACK BULLHEAD.

Cottus Niger. *C. niger, capite utrinque unispinoso, maxilla inferiore longiore, corpore squamis duris.*

Black Bullhead, with a single spine on each side the head, lower jaw longer than the upper, and body covered with hard scales.

THIS also is a native of the African seas, and is described by Cepede from Commerson. Size and habit similar to those of the black Goby: general colour black or dark brown, the second dorsal fin as well as the vent fin being speckled and bordered with deep black; and the first dorsal fin clouded with yellow, and marked by two longitudinal blackish bands: head thick, and largest at the hind part, where it is armed on each side by a small spine, and appears as if swelled: mouth very wide: lower jaw longer than the upper, and both armed with a row of small, short, close-set teeth, resembling those on two bony protuberances near its throat: the whole body, as well as the tail itself, covered with very rough scales.

SOUTHERN BULLHEAD.

Cottus Australis. *C. albidus, capite aculeato, corpore fasciis transversis fuscis.*
Whitish Bullhead, with aculeated head, and body marked with transverse livid bands.
Southern Cottus. *White's Journ. Bot. Bay, p.* 266.

A doubtful species; described by myself in Mr. White's Voyage to Botany Bay. Length about three inches and a half: colour yellowish white, tinged with brown on the upper parts, and variegated by three or four transverse blackish bands: head armed with pretty numerous, strong spines both in front and on the gill-covers: eyes large: body covered with minute scales.

MAILED BULLHEAD.

Cottus Cataphractus. *C. fuscus subtus albidus, corpore loricato, rostro verrucis duobus bifidis, capite subtus cirroso.*
Brown Bullhead, whitish beneath, with the body mailed, the snout furnished with two bifid warts, and the head cirrated beneath.
Cottus cataphractus. *Lin. C. corpore octogono. Bloch. t.* 38.
Armed Bullhead. *Penn. brit. zool.* 3.

The general length of this species is about five inches; the head is large, bony, and very rugged: the end of the nose is armed with four upright, short spines, and on the throat are a number of short white beards: the teeth are very small: the

body is octagonal, covered with a number of bony crusts, and divided into several compartments, the ends of which project into a sharp point, and form several echinated lines along the back and the sides from head to tail: the first dorsal fin usually consists of six spiny rays; the second is placed immediately behind it, and consists of seven soft rays: the pectoral are broad and rounded, and are composed of fifteen rays. This fish is an inhabitant of the European seas, and is found in plenty on our own coasts, living on worms and water-insects, and spawning in the month of May. Its colour is brown above, and whitish beneath: and on the back are three or four blackish transverse bands.

JAPANESE BULLHEAD.

Cottus Japonicus. *C. fusco-flavescens, corpore loricato, cirris nullis.*

Yellowish brown Bullhead, with mailed body and without cirri.

Cottus Japonicus. *C. corpore octogono, squamis osseis aculeatis loricato, cirris nullis. Lin. Syst. Nat. Gmel. p.* 1213.

THIS, which is a native of the seas about the Kurile islands, was first described by Dr. Pallas, who informs us that it grows to the length of about twelve inches, and is of a yellowish white colour, dusky on the back: its general habit resembles that of the mailed Bullhead, being, like that species, covered with a bony armature, disposed into eight prominent lines along the body, but is destitute of the cirri or beards under the throat:

the head is elongated, compressed, and flattened on the upper part, which is also marked by a longitudinal channel: the snout is obtuse, and divided into two lobes: the jaws are armed with a great number of small teeth: the eyes are situated towards the end of the snout, and over each is a small protuberance: the gill-covers are denticulated at the edges: the fins are marked with dusky streaks, and have very rough rays: the pectoral fins are very large and of a rounded shape, as is likewise the tail.

SINGLE-FINNED BULLHEAD.

Cottus Monopterygius. *C. corpore loricato, elongato, fasciis transversis fuscis, pinna dorsali unica, capite inermi.*

Bullhead with elongated mailed body marked by transverse brown bands, single dorsal fin and unarmed head.

Cottus monopterygius. *C. dorsi pinna unica, capite inermi. Lin. Syst. Nat. Gmel.* p. 1213.

Cottus monopterygius. *Bloch. t.* 178.

Native of the Indian seas, and found about the coasts of Tranquebar. Habit resembling that of the two preceding species, but the body more slender in proportion: it is covered by an octagonal bony mail, which towards the tail becomes hexagonal: the eyes are situated near the top of the head: the upper jaw is longer than the lower, and furnished with two recurved spines: the gill-covers

consist of a single lamina, and the branchial orifice is very large: the back is marked by a longitudinal furrow: the colour of this species is brown above, and pale or whitish towards the sides, which are marked by a few transverse reddish-brown bands, accompanied by several spots of similar colour: the fins are large, and of considerable length: the dorsal and anal rather short; the ventral narrow; and the tail rounded.

SCORPÆNA. SCORPÆNA.

Generic Character.

Caput magnum, aculeatum, cirrosum, obtusum, squamis nudum, subcompressum: *Oculi* vicini. *Dentes* maxillis, palato, faucibusque.

Membr. branch. radiis septem.

Corpus torosum. *Pinna dorsalis* unica, radiis anterioribus spinosis.

Head large, aculeated, cirrhose, obtuse, without scales, subcompressed: *Eyes* placed near each other. *Teeth* in the jaws, palate, and throat.

Gill-membrane seven-rayed.

Body fleshy: *Dorsal fin* single, with the rays of the fore-part spiny.

PORCINE SCORPÆNA.

Scorpæna Porcus. *S. fusca nigro variata, cirris ad oculos naresque.*
Brown Scorpæna variegated with black, with cirri at the eyes and nose.

Scorpæna Porcus. *S. cirris ad oculos naresque. Lin. Syst. Nat. p.* 452.

Scorpæna squamis parvis, maxilla inferiore imberbi. *Bloch. t.* 181.

THE genus Sccopæna is distinguished by a peculiar uncouthness of appearance; the head, in some species, being abruptly truncated in front, of vast

size, and armed with various protuberances and spines. Among the most common of the European species is the Scorpæna Porcus, which is frequently seen in considerable numbers in various parts of the Mediterranean, where it chiefly frequents the shores, lying in ambush among stones, sea-weeds, &c. and preying on the smaller fishes and sea-insects: the head is large, the mouth wide, with many rows of small sharp teeth; the eyes large; the gill-covers armed with strong spines intermixed with cirri; the body covered with small rough scales, of a dusky colour, varied with black on the back, and beneath pale, with a reddish cast: the dorsal fin is furnished with very strong spiny rays, which the fish, when caught, erects, and thus wounds its adversary: its general length is about twelve or fifteen inches.

RUFOUS SCORPÆNA.

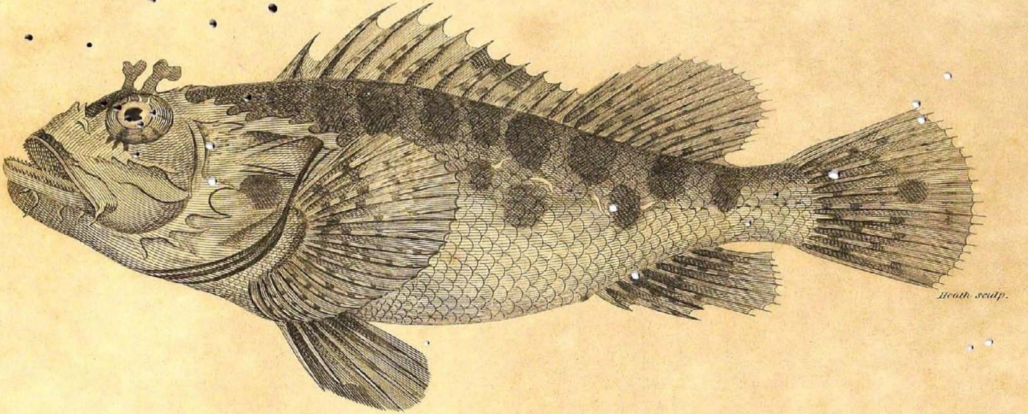
Scorpæna Scrofa. *S. rufa fusco variata, linea laterali cirrosa.*

Rufous Scorpæna, with brown variegations and cirrose lateral line.

Scorpæna Scrofa. *S. cirris duobus ad labium inferius. Lin. Syst. Nat. p.* 453.

Scorpæna squamis magnis, linea laterali cirrosa. *Bloch. t.* 182.

In general appearance so nearly allied to the preceding, that at first view it might be mistaken for the same species; but differs in its superior size, as well as in its larger scales; and particularly



RUFOUS SCORPAENA.

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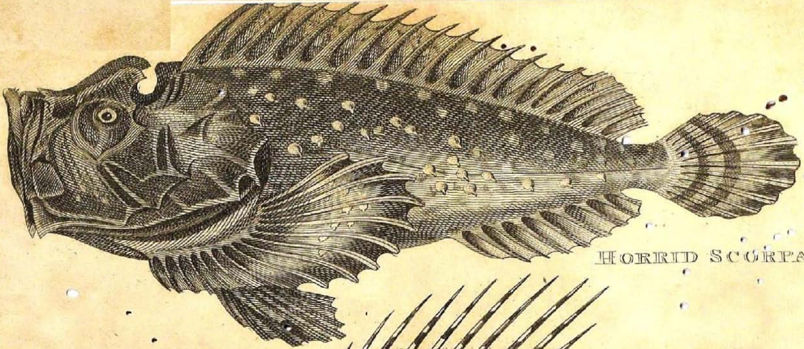
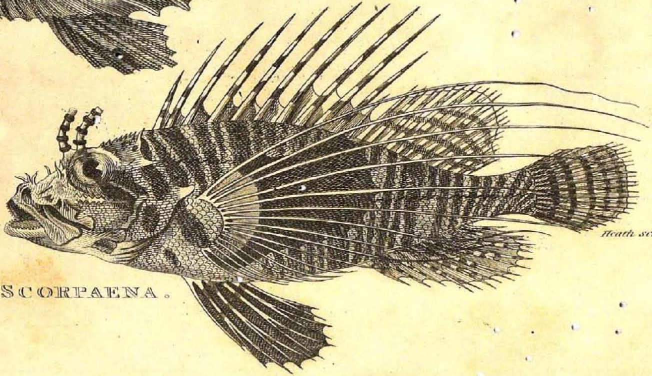


Horrid Scorpaena.



Heath sculp.

Antennated Scorpaena.

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in having several cirri or processes disposed along the lateral line: the colour also is rather rufous than brown as in the former kind. Of this species it is reported that it preys not only on the smaller fishes, but even occasionally seizes on such of the marine birds as happen to swim in its way. It grows to a very considerable size, and is said to have been seen of the length of four feet: it must consequently prove a very formidable enemy to the smaller marine animals. Notwithstanding its forbidding appearance, it is considered as an edible fish.

HORRID SCORPÆNA.

Scorpæna Horrida. *S. fusca alepidota, tuberculis callosis adspersa.*
Brown Scorpæna, without scales, and scattered over with callous tubercles.

Scorpæna horrida. *S. tuberculis callosis adspersa. Lin. Syst. Nat. p.* 453.

Scorpæna horrida. Sc. alepidota. *Bloch. t.* 183.

Of all the species yet discovered the present exhibits the most uncouth and forbidding appearance; resembling rather some imaginary monster of deformity than any regular production of Nature. The head is very large, perfectly abrupt in front, and marked by numerous tubercles, depressions, and spines: on the top is a semilunar cavity: the mouth opens from the upper part, and is large and of a shape somewhat resembling a horse-shoe;

and when closed the lower jaw is in a perpendicular direction: both jaws are armed with numerous small teeth: and the upper is furnished with three cirri, viz. one on each side, and one in the middle: the tongue is large and smooth, but the throat is beset with a great number of small sharp teeth: the eyes are very small, and seated at the base of two large tubercles: the head, body, pectoral and dorsal fins, are beset with numerous abrupt cirri or beards: all the fins are very thick or fleshy, and furnished on the fore part with strong rays: the dorsal reaches nearly the whole length of the back; the pectoral are large and ovate; the ventral small; and the tail rounded at the end. The general colour of this hideous fish is a ferruginous brown, deepest on the upper parts; the abdomen being much paler. It is a native of the Indian seas, and measures twelve or fifteen inches in length.

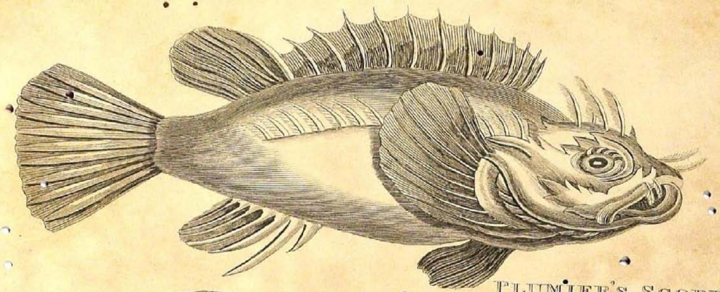
PLUMIER'S SCORPÆNA.

Scorpæna Plumieri. *S. nigricans, capite lineaque laterali cirris plumatis.*

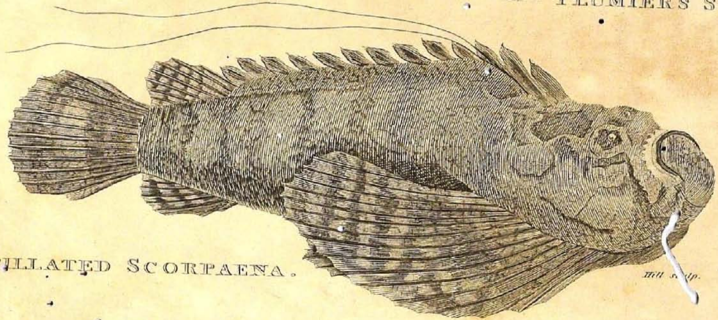
Blackish Scorpæna, with feathered cirri on the head and lateral line.

La Scorpene Plumier. *Cepede* 3. *p.* 282.

Described by Cepede from the manuscripts and drawings of Plumier. Upper part, and sides of the head, together with the gill-covers, armed with



PLUMIER'S SCORPAENA.



BICAPILLATED SCORPAENA.

Hill sculp.

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triangular, flat, and sharp spines: between the eyes are situated four fringed cirri, and four others, of similar form but smaller, are placed on the upper lip; while several more are disposed along the lateral line: the body is covered with scales of moderate size: the first part of the dorsal fin, which is of a rounded form, is furnished with spiny rays, and the tail is also rounded: the general colour of the fish is a very deep or blackish brown, and on the pectoral fins are a few small brown spots: size not mentioned: native of the American seas.

COMMERSONIAN SCORPÆNA.

Scorpæna Commersonii. *S. corpore pinnisque fusco flavoque transversim fasciatis, superciliis serratis, maxilla superiore cirrosa.*
Scorpæna with the body and fins transversly banded with brown and yellow, serrated eyebrows, and bearded upper lip.
La Scorpene Mahé. *Cepede 3. p. 279.*

Described by Cepede from the manuscripts of Commerson: the back is arched and carinated; the lateral line curving downwards: body covered with small scales: head large, and armed with numerous spines: orbits of the eyes elevated, and forming two denticulated crests, with a furrow between them: lower jaw somewhat longer than the upper, which is extensile and furnished on each side with three or four beards: teeth very small and close: nostrils each marked by a small filament: gill-covers each composed of two plates, the first of

which has two cirri at the lower edge, and three spines at its posterior edge: the second plate is triangular, and greatly elongated behind: the dorsal fin is marked in different parts by large and unequal sinuations: the pectoral fins are so long as almost to reach as far as the extremity of the back fin, and the tail is of a rounded shape: the body is varied with brown and yellow transverse bands, and all the fins variegated with the above colours: this species was observed by Commerson about the isles of Mahé, in the year 1768.

CAPE SCORPÆNA.

Scorpæna Capensis. *S. capite utrinque supra oculos quadridentato, cauda subæquali. Lin. Syst. Nat.* Gmel. p. 120. *Gronov. zooph.* p. 88.

Scorpæna with the head marked on each side over the eyes with four teeth or processes, and nearly even tail.

Length near a foot: body covered with small, rough, imbricated scales: head large: eyes large, and situated on each side: mouth wide: jaws equal: gill-covers each composed of two very large scaly plates, the upper of which terminates in four denticulations; and the lower in a single point: back arched and carinated: pectoral fins large and ovate: native of the Cape of Good Hope: described by Gronovius.

BICAPILLATED SCORPÆNA.

Scorpæna Bicapillata. *S. capite truncato, subdepresso, postice filamentis duobus longissimis instructo.*

Scorpæna with abrupt subdepressed head, furnished at the back part with two extremely long filaments.

La Scorpene Double-Filament. *Cepede 3. p. 270.*

Described by Cepede from Commerson: length about four inches: body rather thick, and covered with extremely minute scales; head large, somewhat depressed, and marked with protuberances: lower lip much elevated, so as to make the head appear obliquely truncated in front: eyes very small, and much approximated: pectoral fins very large, and so long as to reach as far as the middle of the body: tail rounded: vent-fin rounded, as is likewise the opposite part of the dorsal fin, while the other part, consisting of spiny rays, has the membrane deeply scalloped: above the neck are seated two very slender filaments, of such a length as to reach beyond the tail: native of the Indian seas: colour not mentioned: dorsal fin has eighteen spiny rays, and seven soft ones: pectoral fins seventeen rays: anal seven, and the tail fourteen.

BRACHIATED SCORPÆNA.

Scorpæna Brachiata. *S. capite truncato subdepresso, pinnis ventralibus brachio adnatis.*

Scorpæna with abrupt depressed head, and ventral fins attached to a brachial process.

La Scorpene Brachion. *Cepede* 3. *p.* 272.

Greatly allied to the preceding species, which it resembles in the shape of the head, the size and situation of the eyes, conformation of the jaws, smallness of the scales on the body, and rounded tail; but differs in being destitute of the two filaments, so remarkable in the other species, as well as in having the membrane of the dorsal fin much less deeply scalloped; while each of the pectoral fins forms as it were a band, which reaches from beneath the fore-part of the branchial aperture to the vent, and is attached by a fleshy longitudinal prolongation or root, as in some of the Gobies: described by Cepede from Commerson.

ACULEATED SCORPÆNA.

Scorpæna Aculeata. *S. aculeis quatuor supra oculos, laminis operculorum spinosis.*

Scorpæna with four spines above the eyes, and both plates of the gill-covers spiny.

La Scorpene Aiguillonée. *Cepede* 3. *p.* 268.

Described by Cepede from specimens in the French Museum: distinguished from the rest of

the genus by having four very strong recurved spines above the eyes: both plates of the gill-covers aculeated: dorsal and anal fins more elevated on one part than the other; the elevated part being of a rounded form, as are the pectoral fins and tail: colour not mentioned: native country unknown: seems allied to the *American Scorpæna.*

AMERICAN SCORPÆNA.

Scorpæna Americana. *S. ore cirroso, capite spinoso, pinnis pectoralibus suborbiculatis.*

Scorpæna with bearded mouth, spiny head, and suborbicular pectoral fins.

Scorpæna Americana. *S. pinnis pectoralibus suborbiculatis. Lin. Syst. Nat. Gmel. p.* 1220.

HEAD armed with protuberances and spines: two beards on the upper lip; and five or six on the lower: the last fifteen rays of the dorsal fin form a portion more elevated than the rest of the fin, and of a rounded figure: the anal fin, which is situated just beneath this part, is of similar shape: the pectoral fins and tail are also rounded: native of the American seas: size and colours not particularized by Cepede, who describes this species from Duhamel: the dorsal fin has thirty-three rays; the pectoral thirteen; the vent fin sixteen, and the tail thirteen.

SPINY SCORPÆNA.

Scorpæna Spinosa. *S. pinna dorsali a capite ad caudam extensa, linea laterali spinosa.*

Scorpæna with the dorsal fin continued from head to tail, and spiny lateral line.

Scorpæna spinosa. *S. linea laterali spinosa. Lin. Syst. Nat. Gmel. p.* 1220.

Body compressed: head spiny: lateral line marked by spiny points: dorsal fin longer than in most of the genus, reaching from between the eyes to the tail: an uncertain species, described in the index to the Leskian Museum: native country unknown.

BEARDED SCORPÆNA.

Scorpæna Barbata. *S. capite cavernoso, cirris geminis in maxilla inferiore. Gronov. mus. ichth.* 1. *p.* 46.

Scorpæna with head marked by protuberances and cavities, and two cirri at the lower lip.

The head of this species is marked in some parts by several protuberances, and in others by pretty large depressions or cavities: on the upper lip are two beards, and the pectoral fins are united to each other by a small membrane: the tail is almost rectilinear: size not mentioned by Cepede, who describes this species from Gronovius.

FLYING SCORPÆNA.

Scorpæna Volitans. *S. fusco flavoque fasciata, pinnis pectoralibus maximis violaceis albo guttatis.*

Scorpæna variegated with brown and yellow transverse bands, with very large violet-coloured pectoral fins spotted with white.

Gasterosteus volitans. *Lin. Syst. Nat. p.* 491.

Scorpæna volans. *S. pinnis pectoralibus trunco longioribus. Bloch. t.* 184.

A FISH of a highly singular appearance: general length ten or twelve inches: colour brownish yellow, variegated by very numerous, deep-brown, transverse stripes, three very narrow or linear ones being interposed between the broader ones: pectoral fins extremely large, and of a deep violet-colour, spotted with white: the ventral fins are of similar colours: the other fins hyaline, with the rays barred with brown; those of the dorsal fin projecting beyond the membrane: tail rounded: head sloping downwards, marked by various inequalities of surface, as well as by several spines and cirri, and striped like the body, which is covered with small scales: native of the rivers of Japan, Amboina, &c. and considered as an excellent food: probably uses its pectoral fins for the purposes of occasional flight, like the fishes of the genus Exocœti and some of the Triglæ.

ANTENNATED SCORPÆNA.

Scorpæna Antennata. *S. fusco flavoque fasciata, pinnis pectoralibus magnis violaceis, fascia oculari fusca.*

Scorpæna variegated with brown and yellow, with large violet-coloured pectoral fins, and brown band across the eyes.

Scorpæna antennata. *S. fascia oculari. Lin. Syst. Nat. Gmel. p.* 1219. *Bloch, t.* 185.

Greatly allied to the preceding species in habit or general appearance, but somewhat larger, and with a less sloping head: body variegated with numerous brown and yellow transverse stripes: eyes larger than those of the preceding fish: immediately over the eyes are seated two longish, cylindric tentacula or cirri, surrounded by several fibrous brown bars: upper jaw longer than the lower: pectoral fins smaller than in the flying Scorpæna, and of a deep violet-colour, with the rays projecting greatly beyond the membrane: dorsal, anal, and caudal fins hyaline, with the rays spotted with brown; those of the dorsal running far beyond the membrane: scales on the body larger than in the flying Scorpæna, and the head nearly plain or whitish in front: native of the rivers of Amboina.

DIDACTYLE SCORPÆNA.

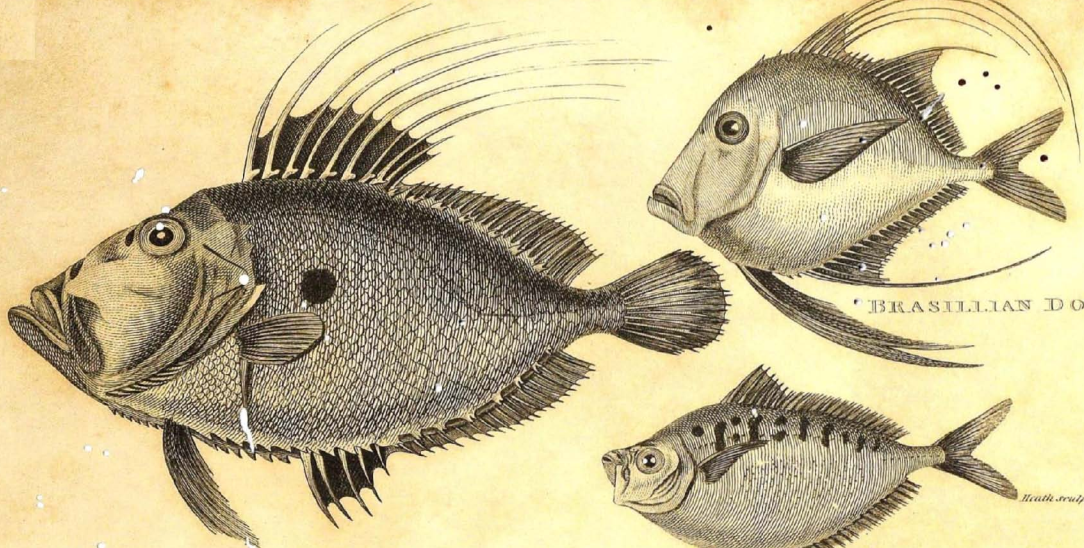
Scorpæna Didactyla. *S. fusca, lituris guttisque flavis variata, digitis duobus distinctis ad pinnas pectorales.*

Brown Scorpæna, blotched and spotted with yellow, with two distinct fingers or processes at the pectoral fins.

Scorpæna didactyla. *S. digitis duobus distinctis ad pinnas pectorales. Lin. Syst. Nat. Gmel. p.* 1219. *Pall. sp. zool.* 7. *t.* 4.

General length about a foot: form extremely grotesque: general colour dusky brown, varied above by transverse yellow streaks, and beneath by roundish spots of the same colour: skin destitute of scales: head depressed, and furnished on different parts with several abrupt fleshy cirri: eyes large, and situated on two approximated protuberances: snout truncated, and marked on the sides by several angular wrinkles, as are also the lower parts of the gill-covers: lower jaw longer than the upper: tongue prominent, and marked with yellow granules and black streaks: on the lower mandible are strong fleshy beards: lateral line near the back: fins furnished with many far-projecting radii, as in the *volitans* and *antennata*: pectoral fins large, ovate, and barred with black; tail of similar form and colours; the dorsal fin reaches from head to tail, and the projecting rays are furnished here and there with several small lacerated appendages: the ventral fins, if they may be so called, consist of two long, distinct, naked processes, placed near each of the pectoral fins: this curious species

was first described by Dr. Pallas, and is a native of the Indian seas: it preys on the smaller fishes, sea-insects, &c. and, notwithstanding its forbidding appearance, is considered as an excellent fish for the table.



COMMON DORY.

BRASILLIAN DORY.

INSIDIOUS DORY.

Heath sculp.

1803 July 1. London Publish'd by G. Kearsley Fleet Street.

ZEUS. DORY.

Generic Character.

Caput compressum, declive. *Labium superius* membrana transversa fornicatum. *Lingua* (plerisque) subulata.

Corpus compressum, latum, subrhombeum, tenue, splendens.

Membr: branch: radiis septem perpendicularibus, infimo transverso.

Pinnæ dorsalis radii (plerisque) filamentosi.

Head compressed, sloping down. *Upper lip* arched by a transverse membrane. *Tongue* (in most species) subulate.

Body compressed, broad, subrhomboid, thin, and of a bright colour.

Gill-membrane with seven perpendicular rays, the lowest transverse.

Dorsal fin (in most species) furnished with projecting, filiform rays.

BRASILIAN DORY.

Zeus Vomer. *Z. argenteus, radio dorsali analique secundo longissimis.*

Silvery Dory, with the second ray of the dorsal and anal fin very long.

Zeus Vomer. *Z. cauda bifurca, &c. Lin. Syst. Nat. p.* 454.

Zeus Vomer. *Z. radio dorsali analique secundo longissimo. Bloch. t.* 193. *f.* 2.

SHAPE rhomboidal: length six or eight inches, or more: body very thin, without scales, and of a

bright silver-colour, tinged with a blueish cast on the upper parts: head small: mouth furnished with very small teeth: second ray of the dorsal and anal fin reaching far beyond the membrane: tail forked: native of the American seas, and sometimes seen in those of the north of Europe: considered as an edible fish, but not much esteemed, on account of the extreme thinness of its body.

INDIAN DORY.

Zeus Gallus. *Z. argenteus, radio dorsali decimo analique secundo corpore longioribus.*

Silvery Dory, with the tenth ray of the dorsal and second of the anal fin longer than the body.

Zeus gallus. *Lin. Syst. Nat. p.* 454. *Bloch. t.* 192. *f.* 1.

Shape rhomboidal, like that of the preceding species: length the same: body very thin, silvery, and without scales: back tinged with a greenish hue: the tenth ray of the dorsal fin, and the second of the anal*, stretching far beyond the membrane: head large; mouth wide: native of the American and Indian seas, and numbered among esculent fishes: when first taken is said to make a grunting kind of noise, like some of the Gurnards.

* It may perhaps be doubted whether the species of this genus are accurately distinguishable by this particular character.

CILIATED DORY.

Zeus Ciliaris. *Z. argenteus, radiis quibusdam in pinna dorsali analique longissimis. Lin. Syst. Nat. Gmel. p.* 1223. *Bloch. t.* 191.

Silvery Dory, with some of the rays in the dorsal and anal fin excessively long.

Body rhomboidal, thin, without scales, and of a bright silver-colour, with a blueish or greenish cast on the back: head small, and very sloping: lower jaw rather longer than the upper: teeth small and sharp: several of the last rays both of the dorsal and anal fin extend to a vast distance beyond the membrane, reaching farther than the tail itself: with these long and flexible filaments the Count de Cepede imagines that the smaller kind of fishes may be attracted, mistaking them for worms, while the animal lies concealed among sea-weeds, &c. waiting for its prey: he also conceives that they may serve to sustain the fish in this situation, by coiling round the stems of sea-plants, &c. This species is a native of the Indian seas, but is not esteemed as a food, the flesh being not only small in quantity, but of a coarse nature: in size it nearly equals the preceding species.

INSIDIOUS DORY.

Zeus Insidiator. *Z. argenteus, lateribus nigro punctatis, ore angusto extensili.*

Silvery Dory, with the sides speckled with black, and narrow extensile mouth.

Zeus Insidiator. *Z. ore angusto. Lin. Syst. Nat. Gmel. p.* 1221. *Bloch. t.* 192. *f.* 2.

NATIVE of the rivers and fresh waters of India: shape rhomboidal, like the former: size smaller: colour bright silvery, blueish green above, and speckled with black points: body without scales: mouth of a much more lengthened form than in the preceding kinds, the lower lip being retractile, and the mouth so constituted as to form at pleasure a kind of tubular snout, through which the animal occasionally ejaculates a drop of water against such insects as happen to alight on, or fly about the aquatic plants near the shores of the waters it inhabits, and by this method (like the Chætodon rostratus, and some few other fishes) obtains its prey.

COMMON DORY.

Zeus Faber. *Z. viridi-aureo fuliginosus, corpore utrinque macula media fusca.*

Gold-green, fuliginous Dory, with a dusky central spot on each side the body.

Faber. *Salvian p.* 203. *Will. ichth. p.* 294. *t. S.* 16.

Zeus Faber. *Z. cauda rotundata, lateribus mediis ocello fusco, pinnis analibus duabus. Lin. Syst. Nat. p.* 454.

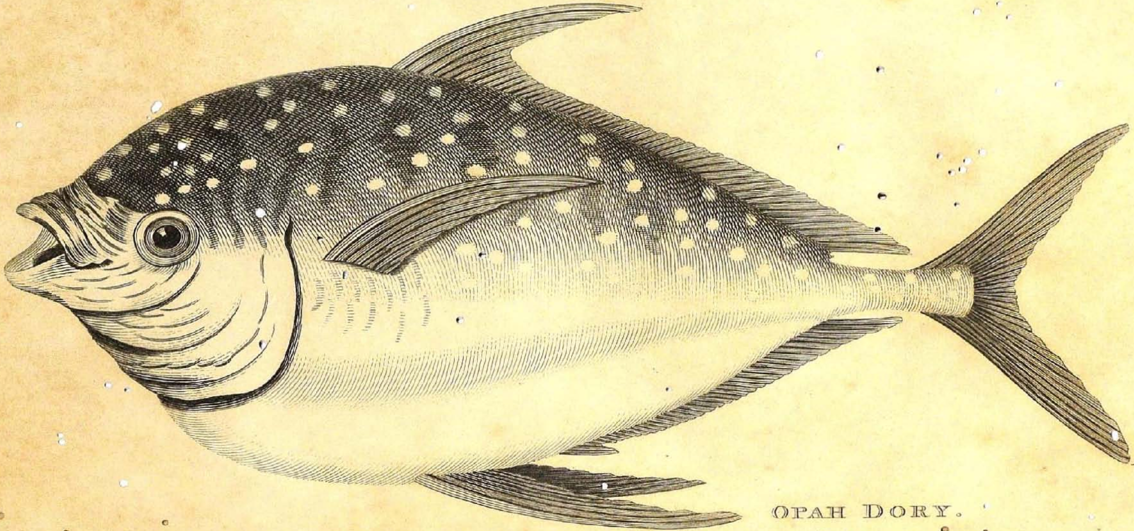
Zeus Faber. *Z. macula fusca in lateribus. Bloch. t.* 41.

The common Dory is a native of the Mediterranean, Northern, and Atlantic seas, and is distinguished by its large and long head, its dusky or smoky green colour, accompanied by a strong gilded tinge, and particularly by a large, oval, dusky spot on each side the body: it is of a less compressed form than others of its genus except the Opah, and is generally found of the length of twelve or fifteen inches, though it sometimes arrives at a far superior size, and to the weight of ten or twelve pounds: the mouth is wide; the lower jaw longer than the upper, the teeth small and sharp, and the eyes large: the whole body is covered with very small scales, and marked by a curved lateral line, which descending pretty suddenly from the gill-covers, passes on to the tail: the back is much arched, and furnished with a row of strong, small prickles, which are also continued along the curve of the abdomen: at the base of the pectoral fins are also two very strong and sharp spines: the first dorsal fin is large, and several of the first rays project to a considerable distance beyond the con-

necting membrane: the tail is of moderate size, and rounded at the end.

Though the reputation of this fish, at least in our own country, is now established as an excellent article of food, yet its introduction to the tables of the higher ranks is of no very distant date; Mr. Quin being generally considered as the first who ventured to recommend it to the attention of the polite world.

The Dory is of an extremely voracious nature, preying on the smaller fishes and their spawn, as well as on various kinds of sea-insects, the smaller shell-fish, &c. When first taken it is said to make the same kind of sound as the Gurnards and Scorpænas, by violently forcing out the air from its gill-covers. It has been figured in the works of Salvian, Willughby, and others, but perhaps the most accurate representation may be found in that of Dr. Bloch.



OPAH DORY.

1803. July 1. London. Publish'd by G. Kearsley, Fleet Street.

OPAH DORY.

Zeus Opah. *Z. cauda sublunari, corpore nunc rubente, nunc viridi, nunc purpureo, albo-guttato. Vivarium Naturæ.* 4. *t.* 140.

Dory with somewhat lunated tail; the body generally either red, green, or purple, with oval white spots.

Zeus Luna. *Z. cauda sublunari, corpore rubente albo-guttato. Lin. Syst. Nat. Gmel. p.* 1225.

Opah. *Phil. Trans. abr.* 11. *p.* 879. *t.* 5. *Brit. Zool.* 3. *t.* 42. *Nat. Misc.* 4. *pl.* 140.

THIS superb species is sometimes found in the Mediterranean and Northern seas, into which it seems to wander as an occasional visitant; being probably a more regular inhabitant of the warmer regions. In size it exceeds every other species hitherto discovered, measuring between four and five feet in length: in colour it appears to vary, the ground being sometimes a brilliant silvery green, and sometimes a bright gold-colour; but in either case the body is variegated on the sides with pretty numerous, and moderately large, oval white spots, while the fins and tail are bright scarlet: the skin is apparently destitute of scales, and perfectly smooth.

Specimens of this fish have been occasionally thrown on the British coasts, instances of which are recorded in the British Zoology and in the Philosophical Transactions. The first regular description seems to have been drawn up by Dr. Mortimer, in the year 1750, from a specimen shewn to the Royal Society, and taken on the coast of Leith

in Scotland. Dr. Mortimer's description is inserted in the Philosophical Transactions for the same year, and is as follows.

"This fish is smooth-skinned, has no scales, or teeth: it has one erect fin on its back, which arises below its neck, and runs within a little of its tail: on each side, about the middle, between its back and belly, a little forward of the vent, arise a pair of fins: from behind the vent runs one fin, within a little of the tail: the tail-fin is large and forked: the eyes are large; the irides are scarlet, encompassed with a circle of gold-colour verged with scarlet: its nostrils are placed above its eyes: the back and upper part of the body, quite to the tail, was of a dark blue or violet-colour; these and the sides of the body, which were of a bright green, were all speckled with oblong white spots: the chaps were of a pale red; the nose, gills, and belly, were of a silver-colour, and all the fins of a bright scarlet. It was three feet seven inches long, and three feet ten inches round, in the thickest part: it weighed eighty-two pounds: its mouth was small; its tongue thick, almost like the human tongue in shape, but rough, and thick set with beards or prickles, which pointed backwards; so that any thing might easily pass down, but could not easily slip back again: therefore these might serve instead of teeth for retaining its prey or food: its gills resembled those of the Salmon: its body grows very taper towards the tail; and from being compressed to ten inches thickness, becomes near the tail almost round, and about three inches thick:

the whole shape of this fish much resembles that of the sea-bream, but it differs in size, being much larger, and in not having teeth nor scales: the fin standing erect on the back has some aculei next the neck, and rises up to eight inches; but in the middle diminishes to one inch; and near the tail rises again to about three inches: the belly-fin, opposite to this, spreads three inches near the tail, and diminishes towards the vent: the tail-fin is forked, and spreads twelve inches: the gill-fins are nine inches long, and three wide at their basis: the two belly-fins were eleven inches long, and three wide at their basis: it seems to be a new species of fish, not yet described by any author."

Dr. Mortimer adds, that the Prince of *Anamaboe*, on the coast of Africa, being then in England, immediately knew it, and said it was common on that coast, and very good to eat: the natives call it *Opah*, and the English the King-Fish.

The cavity of the abdomen, in the above specimen, is said to have been extremely small, and the bones very strong, bearing some resemblance to those of quadrupeds, particularly the shoulder-blades (as they are termed), which were thought to resemble those of a sheep.

A second specimen was taken in the year 1769, near Newcastle, and is described in the British Zoology by Mr. Robert Harrison.

" *Septr.* 12*th*, 1769.

" On Saturday last was thrown upon the sands at *Blyth*, a very rare and beautiful fish, weighing between seventy and eighty pounds; shaped like

the sea-bream: the length was three feet and a half; the breadth from back to belly almost two feet; but the thickness from side to side not above six inches: the mouth small for the size of the fish, forming a square opening, and without any teeth in the jaws: the tongue was thick, resembling that of a man, but rough, and thick set with beards or prickles, so that any thing might easily pass down, but could not easily return back; therefore these might serve instead of teeth to retain its prey: the eyes remarkably large, covered with a membrane, and shining with a glare of gold: the cover of the gills like the salmon: the body diminishes very small to the tail, which is forked, and expands twelve inches: the gill-fins are broad, about eight inches long, and play horizontally: a little behind their insertion the back fin takes its original, where it is about seven inches high, but slopes very suddenly, running down very near the tail, and at its termination becomes a little broader: the belly fins are very strong, and placed near the middle of the body: a narrow fin also runs from the anus to the tail: all the fins, and also the tail, are of a fine scarlet; but the colours and beauty of the rest of the body, which is smooth and covered with almost imperceptible scales, beggars all description: the upper part being of a bright green, variegated with whitish spots, and enriched with a shining golden hue, like the splendour of a peacock's feather: this by degrees vanishes in a bright silvery, and near the belly the gold again predominates in a lighter ground than on the back."

A third specimen was caught at *Brixham* in *Torbay* in 1772. It weighed an hundred and forty pounds, and measured in length four feet and a half, and in breadth two feet and a quarter: its greatest thickness was only four inches, and the general colour was a vivid transparent scarlet varnish over burnished gold, bespangled with oval silver spots of various sizes: the breast appeared like a hard bone, resembling the keel of a ship: the flesh is said to have resembled beef, both in colour and taste.

In the British Museum is a dried specimen of this fish, measuring in length about three feet five inches, from the tip of the snout to the tips of the tail, and in breadth about one foot seven inches in the broadest part.

The elegant figure of the Opah, given in the Philosophical Transactions, is repeated in the present work.

SQUARE DORY.

Zeus Quadratus. *Z. cauda æquali, corpore cinereo transversim nigroque fasciato. Lin. Syst. Nat. Gmel. p.* 1225.

Grey Dory with transverse dusky bars, and even tail.

Faber marinus fere quadratus. *Sloane Jam.* 2. *p.* 290. *t.* 251. *f.* 4.

"This fish (says Sir Hans Sloan in his Natural History of Jamaica) was almost square, with the fins: it was five inches long, and four broad where broadest in the middle, and decreased from thence

to the head and tail gradually: the mouth was little, and set with rows of small and sharp teeth: the tongue round and cartilaginous, the pupil large and black, in a white circle: it had seven fins, two *post branchias*, and two under them in the belly; one on the highest part of the back, with a black inch and half long *ligula*, and several prickles after it: it had one other after this on the back very large, and another on the belly, having each one ear: the tail was almost square; the whole body was coloured with grey or ash-coloured scales, bating three or four transverse and black lines: it had a very crooked line from head to tail."

RED DORY.

Zeus Aper. *Z. rubens, squamis asperis, cauda æquali.*
Reddish Dory, with rough scales and even tail.
Zeus Aper. *Z. cauda æquali, corpore rubente. Lin. Syst. Nat. p.* 1225.
Aper. *Rondel. Aldrov. Will. &c.*

This is a small species, in habit much resembling the common Dory, but scarcely more than three inches in length, and of a reddish colour, like that of the sea-bream (Erythrinus): it is covered with rough, ciliated scales: the snout is somewhat produced, sharpish, and turns a little upwards; and the mouth is protruded in the act of opening, like that of the common Dory: there are no perceptible teeth, and the eyes are large, with white irides: the dorsal fins are two in number, the anterior

furnished with nine strong and sharp spines, the first of which is very low and scarcely observable, the second four times longer, and the third very long and thick: the second dorsal fin consists of twenty-three soft rays: the tail is even at the end, and bright red at the tip: the vent fin has twenty-six rays, of which the three first are strong, spiny, and thrice as short as the rest: the pectoral fins have about fourteen rays, and the ventral six, the first strong and spiny, the rest soft and branched: this fish generally resides at the bottom, and is only taken accidentally after great storms: from its small size it is not numbered among edible fishes, and is besides said to be coarse and of an unpleasant odor. It is a native of the Mediterranean, and seems to have been first described by Rondeletius.

PLEURONECTES. FLOUNDER.

Generic Character.

Oculi ambo in eodem latere capitis.	*Eyes* both on the same side of the head.
Corpus compressum, latere altero dorsum, altero abdomen referente.	*Body* compressed, one side representing the back, and the other the abdomen.

THE singular structure of this genus is justly considered as one of the most curious deviations from the general uniformity or regularity observed by Nature in the external figure of animals, in which (except in a very few instances) both sides of the body are perfectly similar: but in the genus Pleuronectes the animal is so constituted that one side appears to represent the back, and the opposite side the abdomen. They swim laterally, and the eyes are always placed on one side. It is from this circumstance that the division of the species is conducted: viz. into those which have the eyes *dextrous*, or towards the right, when the fish is laid with its coloured side upwards with its abdomen towards the spectator; and *sinistrous* when the eyes are towards the left in the above situation of the fish. It is said however that instances have sometimes occurred in which this natural situation has been

reversed; but such instances must be considered as extremely rare*.

With eyes towards the right.

HOLIBUT.

Pleuronectes Hippoglossus. *P. corpore elongato glabro, supra fusco, subtus albido.*

Flounder with lengthened smooth body, brown above, and white beneath.

P. Hippoglossus. *P. oculis dextris, corpore toto glabro. Lin. Syst. Nat. p.* 456.

P. pinna caudali lunulata. *Bloch. t.* 47.

Holibut. *Will. p.* 99. *t. F.* 6. *Penn. brit. zool.* 3.

This species not only exceeds in size all the rest of the present genus, but may even be considered as one of the largest of fishes; having been sometimes found of the weight of three, and even, according to some accounts, four hundred pounds: it is a native of the Mediterranean and Northern seas, and appears to arrive at its greatest size in the latter: it is considered as the most voracious of its tribe; preying on a variety of other fishes as well as on different kinds of crabs, shell-fish, &c. The Holibut is of a longer or more slender form than most other flat-fish: its colour is deep brown above, and white beneath; the body being quite smooth, and covered with moderately small scales: as a food it is considered as very coarse in com-

* A deviation of this kind sometimes takes place in the univalve shells.

parison with many others of this genus: yet those which are young, or of moderate size, are in some degree of esteem, the part of the body nearest the fins being considered as far superior to the rest of the animal. In the London markets this fish is usually cut into large pieces when exposed to sale: the Greenlanders are said to cut it into thin slips, which they dry in the sun, and thus preserve for winter use.

SMALLER HOLIBUT.

Pleuronectes Cynoglossus. *P. oculis dextris, corpore oblongo glabro, dentibus obtusis, cauda subrotunda. Lin. Syst. Nat.* 456.

Flounder with smooth oblong body, obtuse teeth, and roundish tail.

Extremely allied to the preceding, of which it may, perhaps, be rather considered as a variety than a truly distinct species: length somewhat more than two feet: lateral line oblique, but not bowed or curved: native of the northern seas, and found in considerable numbers in the deep bays about the coasts of Greenland: said to be superior to the common Holibut as an article of food.

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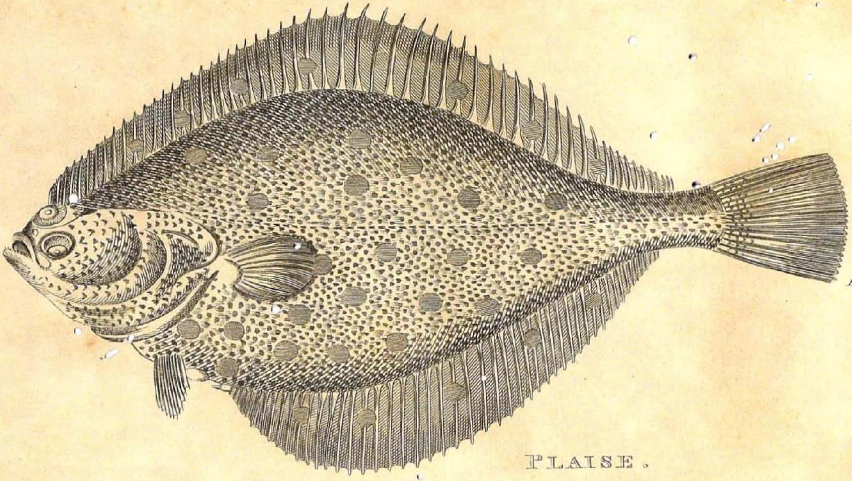

Heath sculp.

PLAISE.

1803 July 1. London Publish'd by G. Kearsley Fleet Street.

PLAISE.

Pleuronectes Platessa. *P. corpore subfusco glabro maculis rotundis fulvis, capite tuberculis sex.*

Smooth brownish Flounder, with round fulvous spots, and six tubercles on the head.

Pleuronectes Platessa. *P. oculis dextris, corpore glabro, tuberculis sex capitis. Lin. Syst. Nat. p.* 456.

The Plaise. *Penn. brit. zool.* 3. *Will. ichth. p.* 95. *Bloch. t.* 42.

This species is, in general, easily distinguished at first sight from others of the genus by its shape and colours, being very broad and flat, and of a fine palish brown above, marked both on the body and fins by pretty numerous, but rather distant, round, and moderately large, orange-coloured spots: the under side is white: behind the left eye is a row of six tubercles, reaching as far as the commencement of the lateral line: the mouth is rather small, the lower jaw longer than the upper, and both furnished with a row of small, and rather blunt teeth.

The Plaise is an inhabitant of the Mediterranean, Baltic, and Northern seas, and is found in considerable plenty about our own coasts. Mr. Pennant observes that it is sometimes taken of the weight of fifteen pounds, but its more general weight is far short of this, one of eight or nine pounds being reckoned a large fish: the best are said to be taken off Rye on the coast of Sussex, and about the Dutch coasts: they spawn in the beginning of May: their general food consists of small fishes,

sea-insects, and the smaller kinds of shell-fish. The Plaise is in considerable esteem as a food, though far inferior to the Sole and Turbot: those are most esteemed which are of moderate size, the smaller ones being less firm than those of more advanced growth. It may be added that the figure of this fish in Willughby's Ichthyology conveys no very striking idea of the animal, the spots being very indistinctly expressed: the representation in Dr. Bloch's work is admirable.

DAB.

Pleuronectes Limanda. *P. subfuscus, squamis asperis, linea laterali supra pinnas pectorales arcuata.*

Brownish Flounder, with rough scales, and lateral line curving over the pectoral fins.

Pleuronectes Limanda. *P. oculis dextris, squamis ciliatis, spinulis ad radicem pinnarum dorsi anique, dentibus obtusis. Lin. Syst. Nat. p.* 457.

The Dab. *Penn. brit. zool.* 3. *Will. ichth. p.* 97. *Bloch. t.* 46.

The Dab is of a very broad, ovate shape, of a yellowish brown colour above, and white beneath: it is covered with moderately large* rough scales: the head is small, and the eyes large: the mouth small, and the teeth are more numerous in the upper jaw than in the lower: the dorsal and anal fins are of moderate width, and the tail nearly even at the end: the lateral line curves downwards over

* Mr. Pennant calls them small, but they are certainly rather large in comparison with those of the major part of the genus.

the pectoral fins, and from thence runs strait to the tail.

This species is an inhabitant of the Mediterranean, the Baltic, and the Northern seas, but is less common than either the Plaise or Flounder, to both of which it is superior as a food, though inferior in its general size: it is in its highest season in the months of February, March, and April, after which it is observed to grow less firm: it spawns in May, or, if the spring prove cold, in June. Dr. Bloch observes that the small spines, mentioned by Linnæus as situated at the base of the dorsal and ventral fins, were not observable in the specimens which he examined.

SMEAR-DAB.

Pleuronectes Lævis. *P. fusco-flavescens squamis lævibus, subtus albus, maculis quinque fuscis.*

Yellowish-brown smooth-scaled Flounder, beneath white with five dusky spots.

Rhombus lævis Cornubiensis maculis nigris? (a Kit, Mr. Jago). *Raii syn. pisc.* 162. *f.* 1.

Smear-Dab. *Penn. brit. zool.* 3.

" We found (says Mr. Pennant) one of this species at a fishmonger's in London, where it is known by the name of the *Smear-Dab*. It was a foot and a half long, and eleven inches broad between fin and fin on the widest part: the head appeared very small, as the dorsal fin began very near its mouth, and extended very near to the tail: it consisted of seventy-nine rays: the eyes were

pretty near each other: the mouth full of small teeth: the lateral line was much incurvated for the first two inches from its origin, then continued strait to the tail: the back was covered with small smooth scales, was of a light brown colour, obscurely spotted with yellow: the belly white, and marked with five large dusky spots: it was a fish of goodness equal to the common Dab."

LONG DAB.

Pleuronectes Limandoides. *P. fusco-flavescens, squamis magnis asperis, linea laterali lata, recta.*

Yellowish-brown Flounder, with large rough scales, and strait, broad lateral line.

Pleuronectes Limandoides. *P. corpore oblongo asperoque, linea laterali recta lataque. Lin. Syst. Nat. Gmel. p.* 1232. *Bloch. t.* 186.

Of a much longer shape than the Dab, and more approaching to that of the sole: colour pale ferruginous brown above, white beneath: scales larger in proportion than those of the common Dab, and rough: lateral line strait and broad: eyes large; mouth wide, and beset with several rows of small teeth: dorsal and anal fins moderately broad: tail rounded at the end. It is an inhabitant of the northern seas, and like others of this genus, commonly lies at the bottom, where it preys on small crabs, &c. and is in considerable estimation as a food.

FLOUNDER.

Pleuronectes Flesus. *P. fuscus, linea laterali aspera, spinulis ad radices pinnarum.*

Brown Flounder, with rough lateral line, and a series of spines at the base of the fins.

Pleuronectes Flesus. *P. oculis dextris, linea laterali aspera, spinulis ad pinnas. Lin. Syst. Nat. p.* 457.

The Flounder. *Will. ichth. p.* 98. *Penn. brit. zool.* 3. *Bloch. t.* 44.

The Flounder is allied to the Plaise in shape, but is generally of smaller size and of more obscure colours, the upper side being of a dull brown, marbled with paler and darker variegations, and the under side of a dull white, sometimes obscurely varied with brown: the body is covered with very small scales, and along the back, at the base of the dorsal fin runs a row of small sharp spines: a similar row runs along the base of the anal fin: the lateral line is marked by a third row, continued almost to the base of the tail, which is slightly rounded at the end: at the commencement of the anal fin is a pretty strong spine.

The Flounder is an inhabitant of the Northern, Baltic, and Mediterranean seas: about our own coasts it is extremely common, and even frequents our rivers, at a great distance from the salt waters: it is in considerable esteem as a food, though much inferior to some others of the genus.

The *Pleuronectes Passer*, of Linnæus, considered by Mr. Pennant and some others as a variety of the Flounder, having the eyes on the left side, is

at present allowed to constitute a distinct species, and will of course be described in its proper division.

ROSE-COLOURED FLOUNDER.

Pleuronectes Roseus. *P. oculis dextris, corpore roseo.*

Rose-coloured Flounder, with eyes towards the right. *Naturalist's Miscellany. Vol. 7. pl.* 238.

General proportions those of a Flounder: length about nine inches: colour most delicate rose, slightly tinged in some parts with yellowish, and in others with silvery white: lower surface paler, or very nearly white: fins and tail pale yellow-brown: skin apparently destitute of scales, though marked by very minute scale-like reticulations, and void of all asperity either on the side-line or at the origin of the fins. Taken in the Thames, and preserved in the Leverian Museum.

SOLE.

Pleuronectes Solea. *P. oblongus fuscus, squamis asperis, maxilla superiore longiore.*

Oblong brown Flounder, with rough scales, and upper jaw longer than the lower.

Pleuronectes Solea. *P. oculis dextris, corpore aspero oblongo, maxilla superiore longiore. Lin. Syst. Nat. p.* 456.

Buglossus. The Sole. *Will. ichth. p.* 100. *Penn. brit. zool.* 3. *Bloch. t.* 45.

The Sole is an inhabitant of the Northern, Baltic, Mediterranean, and American seas, and

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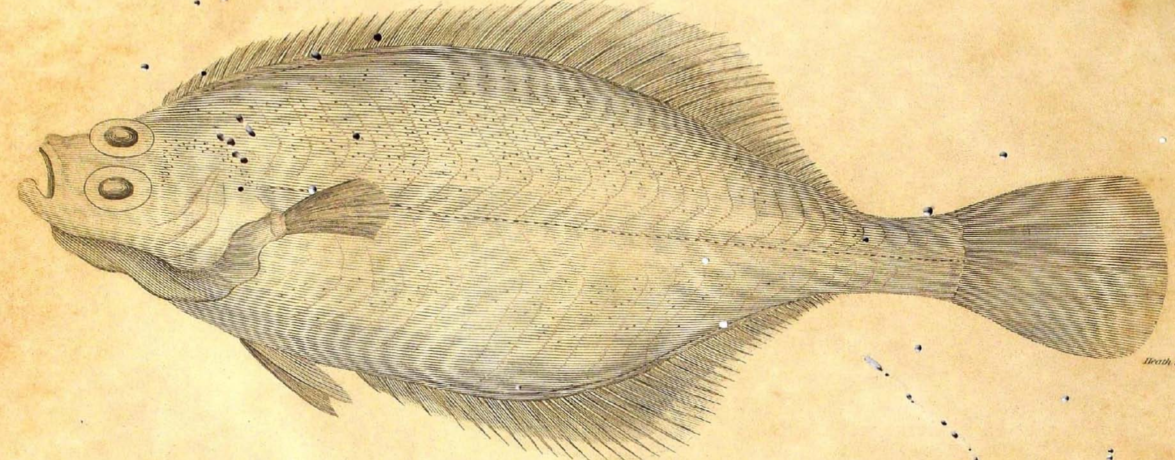


Heath sc.

ROSE-COLOURED FLOUNDER.

1803 July 1. London Publish'd by G. Kearsley Fleet Street.

grows to the length of more than two feet, and to the weight of eight pounds: its general size however is much smaller: its shape is that of a very long oval: its colour obscure brown above, and white beneath: it is covered with small rough scales of an oblong form, each terminated by numerous spines, and very strongly fastened to the skin: these scales, from the elegance of their structure, form a favourite microscopic object, and an erroneous idea sometimes prevails that the spiny end of the scale is that by which it was inserted into the skin: the pectoral fins, especially that on the upper side, are commonly tipped with black: the head is small; the eyes and mouth of moderate size; the upper jaw longer than the lower, and both fringed round the edges with a row of very small, white beards.

Next to the Turbot, this fish is considered as the most delicate of the genus, and is by many even preferred to the former; the flesh being remarkably firm, white, and well-flavoured: those of moderate size are, in general, most esteemed. The Sole delights in lying at the bottom of the coasts which it frequents, preying on small shell-fish, spawn, sea-insects, &c. and is generally taken by the trawl-net: the chief fishery, according to Mr. Pennant, is at *Brixham* in *Torbay*.

VENETIAN SOLE.

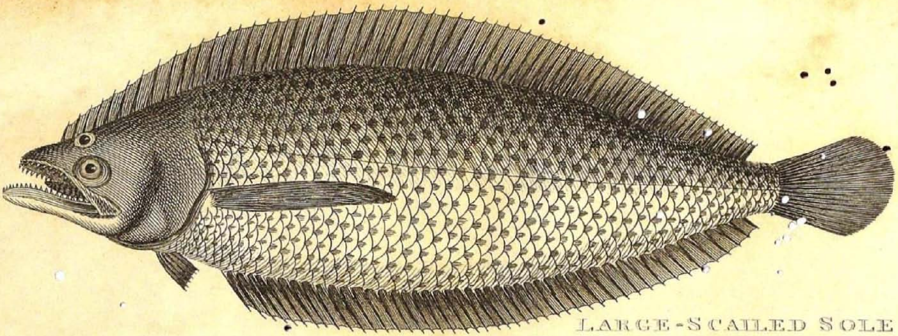
Pleuronectes Linguatula. *P. oblongus subfuscus, squamis asperis, ano sinistro, dentibus acutis. Lin. Syst. Nat. Gmel. p.* 1233.

Brownish oblong Flounder, with rough scales, vent on the left side, and sharp teeth.

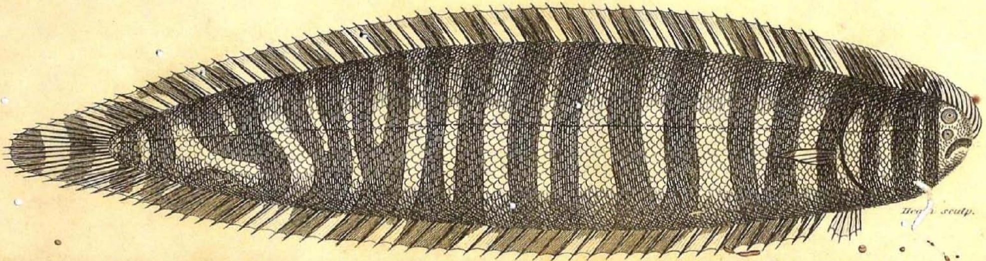
Pleuronectes Linguatula. *P. oculis dextris, ano sinistro, dentibus acutis. Lin. Syst. Nat. p.* 457.

Linguatula. *Will. ichth. Bellon. &c.?*

If this be the Linguatula of Bellonius and Willughby, it is thus described. In figure it resembles the Sole, but is not above half as large, and is somewhat shorter in proportion: its colour is paler, and its scales much larger; the vent is placed on the under side, and not on the margin: the mouth is very wide; the tongue round and long; the teeth sharp: the eyes are placed near each other and of moderate size: the iris is gold-coloured: the pectoral and ventral fins have the same number of rays with those of the Sole: the dorsal has sixty-seven rays, and the anal forty-five. This species is said to be found about the coasts of Italy, and Willughby mentions his having seen it at Rome and at Venice.



LARGE-SCALED SOLE.



Heath sculp.

ZEBRA SOLE.

1803. July 1. London Publish'd by G. Kearsley, Fleet Street.

PALLASIAN SOLE.

Pleuronectes Glacialis. *P. lævissimus, supra fuscus, subtus albus, pinnæ dorsalis analisque radiis mediis spinis minimis hispidis. Lin. Syst. Nat. Gmel. p.* 1234. *Pall. it.* 3. *p.* 706.
Very smooth brown Flounder, white beneath, with the middle rays of the dorsal and anal fin roughened by minute spines.

Inhabits the frozen sea, frequenting sandy places: length about nine inches: the bony part of the head, behind the eyes, is prominent and rough: body perfectly smooth, of a brown colour above, and white beneath: observed by Dr. Pallas.

ZEBRA SOLE.

Pleuronectes Zebra. *P. oblongus albidus, fasciis pluribus transversis duplicatis fuscis.*
Whitish oblong Flounder, with several transverse double brown bands.
Pleuronectes Zebra. *P. fasciis transversis plurimis. Lin. Syst. Nat. Gmel p.* 1226. *Bloch. t.* 187.

An elegant species, and readily distinguishable by its colours, the upper part being white, with a brownish cast towards the back, and marked from head to tail by numerous, double, deep brown, transverse bands, passing across the fins themselves: the body is rather longer in proportion than in the common Sole, and the dorsal and anal fin are continued into the tail which is of a slightly pointed shape: the scales are rough and toothed

at their edges, and the lateral line strait. Native of the Indian seas, and in considerable esteem as a food.

SLENDER-FINNED FLOUNDER.

Pleuronectes Trichodactylus. *P. griseus, fusco variegatus, pinnis pectoralibus filiformibus. Lin. Syst. Nat. Gmel. p.* 1226.

Grey Flounder, with dusky variegations, and filiform pectoral fins.

Pleuronectes asper canescens, pinnis lateralibus vix conspicuis. *Artedi gen.* 18. *syn.* 33. *spec.* 60.

An uncertain species, known only from the description given by Artedi, who says that it is rough, of a grey colour with dusky variegations; that the eyes are towards the right, and that the pectoral fins are so slender as to be scarce conspicuous, consisting only of four filiform rays on the coloured side of the body, and of one only on the under side. Native of the Indian seas, and found about Amboina.

CAROLINA SOLE.

Pleuronectes Plagiusa. *P. oblongus griseo-fuscus, pinna dorsali caudali analique unitis.*

Grey-brown oblong Flounder, with the dorsal, caudal, and anal fins united.

Pleuronectes Plagiusa. *P. corpore oblongo scabriusculo, pinna dorsali analique caudæ unitis. Lin. Syst. Nat. Gmel. p.* 1227.

Allied in habit to the common Sole, but has the dorsal and anal fins united with the tail, as in

the Zebra Sole: colour greyish brown: scales roughish. Native of the American seas: observed about Carolina by Dr. Garden.

OCELLATED SOLE.

Pleuronectes Ocellatus. *P. corpore ocellis quatuor atris, iridibus albis. Lin. Syst. Nat. Gmel. p.* 1227. *Mus. Ad. Frid.* 2. *p.* 68.
Sole marked with four black spots with white irides.

NATIVE of Surinam: described by Linnæus in the second part of the Museum Adolphi Friderici: dorsal fin plaited: tail marked by a black bar.

RONDELETIAN SOLE.

Pleuronectes Rondeletii. *P. subfuscus, maculis magnis distantibus subnigris, pupillis pallidis.*
Brownish Sole, marked with large, distant, blackish spots with pale pupils.
Solea oculata Rondeletii. *Will. ichth. p.* 100. *t.* F. 8. *f.* 4.

SLIGHTLY described by Rondeletius, who represents it as by no means uncommon about Marseilles: shape like that of the common Sole: scales very closely fixed: body marked above by seven large dusky ocellated spots, of which that in the middle is largest: in the figure of this fish given by Rondeletius these spots appear perfectly well defined, round, and with pale or whitish centres.

PLATESSOID FLOUNDER.

Pleuronectes Platessoides. *P. oblongus grisco-fuscus, squamis magnis asperis, corpore supra maculis brunneis notato.*
Oblong grey-brown Flounder, with large rough scales, and body marked above by rufous-brown spots.
Pleuronectes platessoides. *P. corpore supra maculis bruneis. Lin. Syst. Nat. Gmel. p.* 1234.

NATIVE of the seas about Greenland, chiefly frequenting the sandy mouths of rivers, and is not a common fish: length about a foot: head smooth: eyes middle-sized, with silvery irides: lower jaw longer than the upper, and terminated by a tubercle: tongue slender, smooth, and long: pectoral and ventral fins small: tail large and roundish: general shape like that of the *P. Linguatula;* scales like those of the common Sole, and the colour like that of the Plaise, viz. greyish brown above, with fulvous spots, and white beneath. Observed by Otto Fabricius during his residence in Greenland.

SILVER SOLE.

Pleuronectes Argenteus. *P. argenteus, subtus subfuscus.*
Silvery Sole, brownish beneath.
Petiv. gazoph. 10. *t.* 26.

SLIGHTLY described by Petiver: shape like that of the common Sole: upper jaw longer than the lower: lateral line strait: upper side of the body of a silvery colour; under side pale brown: native of the Indian seas.

SMOOTH SOLE.

Pleuronectes Diaphanus. *P. candidus diaphanus, squamis tenuissimis deciduis.*

White, transparent Sole, with small, thin, deciduous scales.

Arnoglossus, vel Solea lævis Rondeletii. *Will. ichth. p.* 102.

Smooth Sole. *Penn. brit. zool.* 3.

Described by Ray, from Rondeletius and others, as extremely thin, pellucid, and white; and covered with scales so minute, and those immediately deciduous, as to merit the appellation of *smooth sole:* it is said to be a rare species, and to be found about the coasts of Cornwall, where, from its transparency, it is called the *lantern-fish.*

BEARDED SOLE.

Pleuronectes Barbatus. *P. oblongus lævis, maxillis utrisque latere albo cirrosis, pinnis pectoralibus nullis, corpore albo-maculoso. Gronov. zooph.* 1. *p.* 75.

Oblong, smooth Sole, with whitish spots, both jaws deeply bearded on the left side, and no pectoral fins.

Described by Gronovius: shape similar to that of the common Sole, but rather wider in proportion: lips bearded on the left or uncoloured side, the series of beards reaching from the under jaw to the beginning of the ventral fins: colour, according to Gronovius, brown with whitish circular spots: native region unknown.

MARBLED SOLE.

Pleuronectes Marmoratus. *P. fuscus, maculis lineisque flexuosis lacteis.*
Brown Sole, with milk-white spots and flexuous streaks.
L'Achire marbré. *Cepede* 4. *p.* 660.

Slightly described by Cepede from Commerson: shape like that of the common Sole: colour, on the upper side brown, variegated or marbled with differently shaped milk-white spots and marks, some being circular, others long and confluent: fins varied with grey and blue, and speckled with black points: scales so small as to be difficultly seen: no pectoral fins: along the base of the dorsal and anal fins a row of pores, answering in number to the rays of the fins: from these, in the living animal, Commerson observed a whitish mucus to exsude on pressure: native of the Indian seas, and much esteemed as a food.

PAVONIAN SOLE.

Pleuronectes Pavoninus. *P. fuscus, maculis irregularibus albidis, medio fuscis.*
Brown Sole, with irregular whitish spots with brown centres.
L'Achire pavonien. *Cepede.* 4. *p.* 660.

Observed by Cepede in the collection of the Prince of Orange: shape like that of the two preceding species; and equally distinguished by the want of pectoral fins: body brown on the upper

side, and marked by spots somewhat resembling in shape those on the tail of a peacock, being white with brown centres: probably a native of the Indian seas.

This species (if such it be) together with the two preceding, the lineated, the bilineated, and the ornamented Sole, is unnecessarily placed by Cepede in a distinct genus, under the title of *Achirus*, from the circumstance of wanting the pectoral fins.

LINEATED FLOUNDER.

Pleuronectes Lineatus. *P. corpore fusco, scabro, nigro transversim fasciato, pinnis pectoralibus nullis.*

Brown, rough Flounder, with transverse black lines, and without pectoral fins.

Pleuronectes lineatus. *P. oculis sinistris, corpore scabro nigro fasciato, pinnis pectoralibus nullis. Lin. Syst. Nat. p.* 458.

Passer lineis transversis. *Sloane Jam.* 2. *p.* 77.

Form that of a Turbot: length seven or eight inches: body covered with small rough scales, and of a deep brown above, marked by seven or eight transverse black streaks: the rays of all the fins and tail roughened by small shagreen-like tubercles: under part of the body white, marked with round, blackish spots. Native of the American seas.

With eyes towards the left.

TURBOT.

Pleuronectes Tuberculatus. *P. griseo-fuscus, subnigro variatus, corpore tuberculis muricato.*

Grey-brown Flounder, with blackish variegations, and body roughened with tubercles.

Pleuronectes maximus. *P. oculis sinistris, corpore aspero. Lin. Syst. Nat. p. 459.*

Pleuronectes tuberculis osseis scaber. *Bloch. t. 49.*

The Turbot or Bret. *Will. ichth. p. 94. Penn. brit. zool. 3.*

The Turbot, generally considered as superior to every other species as an article of food, is an inhabitant of the Mediterranean and Northern seas, where it often arrives at a very large size: it is however far inferior in this respect to the Holibut, and is therefore not very happily distinguished by Linnæus under the name of *Pleuronectes maximus.* It is of a broader and squarer form than any other of the genus except the Pearl, and is of a dark brown above, marbled with blackish spots of different sizes; and white beneath: the scales are so small as to be scarcely observable, but the skin is of a wrinkled appearance, and covered with pretty numerous and moderately large pointed tubercles or abrupt spines, those on the upper or coloured side being far larger than those on the under side: the lateral line forms an arch over the pectoral fins, and from thence runs strait to the tail.

Like the rest of this genus, the Turbot generally lies in deep water, preying on worms, shell-fish,

and marine insects, as well as on various kinds of small fishes: it is taken in great quantities about the northern coasts of England, as well as on those of France, Holland, &c. and is baited for with pieces of herring, haddock, &c. but more particularly with the smaller or river lamprey, vast quantities of which are said to be purchased of our fishermen by the Dutch, to the annual amount of not less than seven hundred pounds: they are chiefly taken about Mortlake, and sold to the Dutch as bait for the cod-fishery, but that people are said to have the art of preserving them till the commencement of the turbot-fishery.

The general manner in which the Turbot-fishery is practised at *Scarborough* is thus detailed by Mr. Pennant in the British Zoology, from the communications of Mr. Travis of that place.

"When they go out to fish, each man is provided with three lines: each man's lines are fairly coiled upon a flat, oblong piece of wicker-work; the hooks being baited, and placed very regularly in the centre of the coil: each line is furnished with fourteen score of hooks, at the distance of six feet two inches from each other: the hooks are fastened to the lines upon sneads of twisted horse-hair seventeen inches in length: when fishing, there are always three men in each coble, and consequently nine of these lines are fastened together, and used as one line, extending in length near three miles and furnished with 2520 hooks: an anchor and a buoy are fixed at the first end of the line, and one more at each end of each man's lines, in all four

anchors, which are commonly perforated stones, and four buoys, made of leather and cork: the line is always laid across the current: the tides of flood and ebb continue an equal time upon our coast, and when undisturbed by winds, run each way about six hours: they are so rapid that the fishermen can only shoot and haul their lines at each turn of the tide; and therefore the lines always remain on the ground about six hours: the same rapidity of the tide prevents their using hand-lines, and therefore two of the people commonly wrap themselves in the sail and sleep, while the other keeps a strict look-out, for fear of being run down by ships, and to observe the weather; for storms often rise so suddenly, that it is with extreme difficulty they can escape to shore, leaving their lines behind. The coble is twenty feet six inches long, and five feet extreme breadth: it is about one ton burthen, rowed with three pair of oars, and admirably constructed for the purposes of encountering a mountainous sea: they hoist sail when the wind suits."

PEARL.

Pleuronectes Rhombus. *P. fuscus, subflavo maculatus, corpore glabro.*

Brown Flounder, with yellowish spots, and smooth body.

Pleuronectes Rhombus. *P. oculis sinistris, corpore glabro. Lin. Syst. Nat. p. 452.*

Pleuronectes corpore lato et glabro. *Bloch. t. 36.*

The Pearl. *Will. ichth. p. 95. Penn. brit. zool. 3.*

The Pearl is distinguished from the Turbot by the perfect smoothness of its skin, which is covered with scales of moderate size, and is of a pale brown colour above, marked by scattered yellowish or rufous spots, and white beneath: the lateral line, as in the Turbot, is first arched over the pectoral fins, and from thence runs strait to the tail: in its general form this fish resembles the Turbot, but is usually inferior in size.

The Pearl is by most modern authors supposed, perhaps erroneously, to have been the Rhombus of the ancient Romans, of which a specimen of enormous size is said to have been taken in the reign of Domitian*, who ludicrously ordained a *Senatusconsultum* relative to the mode of bringing it to table.

* *Juven. sat. 4.*

WHIFF.

Pleuronectes Punctatus. *P. fuscus, maculis nigricantibus, punctis rubris, squamis asperis.*

Brown Flounder, with blackish spots, red freckles, and rough scales.

Pleuronectes punctatus. *P. corpore lato asperoque. Lin. Syst. Nat. Gmel. Bloch. t.* 189.

The Whiff. *Penn. brit. zool.* 3.?

This, says Mr. Pennant, bears some resemblance to the Holibut: the length of a specimen examined by that author was eighteen inches; the greatest breadth not seven, exclusive of the fins: the mouth was extremely large; the teeth very small; the under jaw hooked over the upper; the eyes were large; the scales large and rough; the side-line tuberculated and uncommonly incurvated at the beginning, making a sharp angle, and hen going strait to the tail, which is rounded: the colour of the body was cinereous brown, clouded in parts, and obscurely spotted: the under side white, tinged with red.

The figure of this species in the work of Dr. Bloch is represented as of a dusky brown above, with numerous, rather large, roundish black spots of unequal sizes, between which are interspersed several very small red spots. In these particulars it seems to agree much better with the description contained in Ray's synonym than the *Smear-Dab*, which Mr. Pennant supposes to be the *Kit* of the Cornish fishermen.

BILINEATED SOLE.

Pleuronectes Bilineatus. *P. fuscus, pinna dorsali, anali, caudaque unitis, lineis lateralibus duabus.*

Brown Sole, with dorsal, anal, and caudal fin united, and two lateral lines.

Pleuronectes bilineatus. *P. lineis lateralibus duabus. Bloch. t.* 188.

Shape resembling that of the Zebra Sole: colour above pale brown, beneath rufous white: scales small, round, and denticulated: head larger than in the rest of the Soles: mouth small: dorsal and anal fin united, as in the Zebra Sole, with the tail, which is of a slightly pointed shape: native of China: particularly distinguished by having two lateral lines, one running strait along the middle, the other near the back.

ORNAMENTED SOLE.

Pleuronectes Ornatus. *P. subfuscus, maculis ocellatis albis medio fuscis.*

Brownish Sole, with white ocellated spots with brown centres.

Achirus ornatus. *Cepede* 4. *p.* 663.

Shape like that of the preceding: colour pale brown above, with eight or nine deep-brown transverse bands: scales small, round, and denticulated: lateral line running in the direction of the back: observed by Cepede in the collection of the Prince of Orange.

LARGE-SCALED SOLE.

Pleuronectes Macrolepidotus. *P. fuscus, squamis magnis, pinnis pectoralibus lanceolatis.*

Brown Sole, with large scales, and lanceolate pectoral fins.

Pleuronectes macrolepidotus. *P. squamis magnis. Bloch. t.* 190.

Shape like that of a Sole, but somewhat broader in proportion: colour yellowish brown above, whitish beneath: scales very large, each marked at the base by a dusky spot: head without scales and spotted with brown: mouth very wide: teeth rather long: pectoral fins rather long and pointed: ventral very small: dorsal, anal, and caudal like those of the common Sole. Native of the South-American seas.

SINISTROUS FLOUNDER.

Pleuronectes Passer. *P. fuscus, oculis sinistris, linea laterali aspera, spinulis ad radices pinnarum.*

Brown Flounder, with eyes toward the left, rough lateral line, and a series of spines at the base of the fins.

Pleuronectes Passer. *P. oculis sinistris, linea laterali sinistra aculeata. Lin. Syst. Nat. p.* 459. *Bloch. t.* 50.

So nearly allied in general appearance to the common Flounder that it has been considered by Pennant and some others as a variety of that species differing merely in having the eyes towards the left: Artedi, Linnæus, and Bloch however concur in establishing it as a distinct species: the

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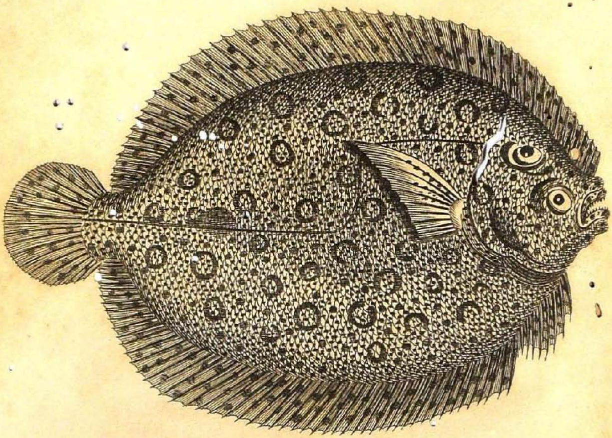
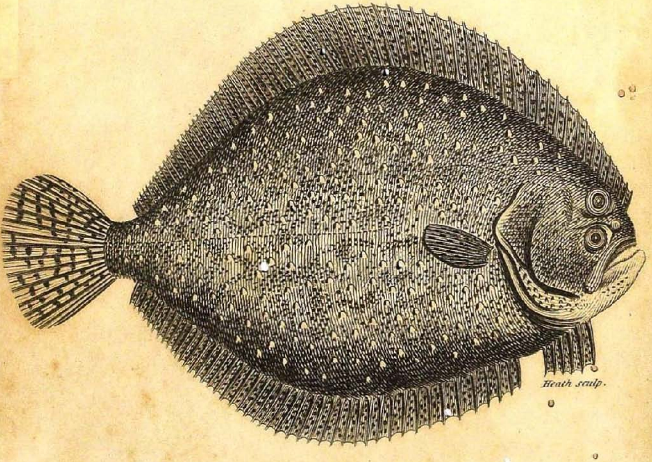


ARGUS FLOUNDER.



Heath sculp.

TURBOT.

1803. July 1. London Publish'd by G. Kearsley Fleet Street.

lateral line on the upper side is rough or spiny, as in the Flounder, as also the bases of the dorsal and anal fin, but the spines on those parts are all strait, whereas in the former species they are intermixed with curved ones: in colour it resembles the Flounder.

ARGUS FLOUNDER.

Pleuronectes Argus. *P. albidus, maculis rotundis flavis cæruleo marginatis.*

Whitish Flounder, with round yellow spots margined with blue.

Pleuronectes Argus. *P. corpore vario, pinna caudæ rotundata. Bloch. t.* 48. *Lin. Syst. Nat. Gmel. p.* 1239.

Passer oculatus. *Plumier, Mss.*

This elegant species is of the same general form with the Turbot, and is of a pale yellow, or rather a yellowish white colour on the upper side marked by numerous eye-shaped spots, consisting of bright-blue circles with yellow centres: the whole skin is also marked both on the body and fins with small blue and brown specks, and is covered with small scales: the larger spots first mentioned vary somewhat in different individuals, as well as on different parts of the same fish, being sometimes formed by complete circles of blue, but more commonly by two or three broken crescent-shaped marks of that colour: the under side is of a whitish or pale grey colour: the lateral line is arched over the pectoral fins, and is thence continued strait to the tail,

which is rounded at the tip. This beautiful fish is a native of the American seas, and some of its varieties seem to have been considered by authors as distinct species.

VAR. ?

Pleuronectes lunatus. *P. corpore ocellis dimidiatis sparsis cæruleis. Lin. Syst. Nat. Gmel. p.* 1239. *Solea lunata et punctata. Catesb. Car.* 2. *t.* 27.

Observed by Catesby, who in his Natural History of Carolina represents it as of a pale brown colour, with numerous blue crescent-shaped spots, and lunated tail.

VAR. ?

Pleuronectes Mancus. *P. capite tuberculato, pinnis pectoralibus inæqualibus. Lin. Syst. Nat. Gmel. p.* 1238. *Brouss. ichth. dec.* 1. *t.* 3. 4.

Body of an oblong elliptic form, covered with rather large scales: right side and fins cinereous, with blackish specks and unequal, blueish, lunated and circular variegations: left side greyish white, with round brown spots: pectoral fin on the left side falcate, on the right oblong-ovate. Native of the American and Indian seas.

STELLATED FLOUNDER.

Pleuronectes Stellatus. *Pl. fuscus, tuberculis numerosissimis albidis spinoso-radiatis.*
Brown Flounder, with very numerous whitish tubercles radiated with spines.
Pleuronectes stellatus. *Pall. nov. act. Petrop.* 1787.

This elegant species is frequently found, according to Dr. Pallas, about the mouths of rivers in the Curile islands. Its usual length is supposed to be somewhat less than a foot and half; or nearly that of a Plaise; which it also resembles in shape: the eyes are on the left side, which is of a brown colour, and very thickly muricated all over with small tubercles of a whitish cast, smooth in the centre but radiated round the edge with small spines: the under side is white, and the fins are pale with dusky or blackish streaks here and there in the direction of the rays.

CAROLINA SOLE.

Pleuronectes Dentatus. *P. subfuscus, dentibus acutis exsertis.*
Brownish Sole, with sharp, exserted teeth.
Pleuronectes dentatus. *P. corpore oblongo glabro, dentibus exsertis. Lin. Syst. Nat. Gmel. p.* 1236.

Observed about Carolina by Dr. Garden: teeth sharp; tail rounded and scaly: in the dorsal fin are eighty-seven rays, in the pectoral twelve, in the ventral sixty-six, and in the caudal seventeen.

JAPANESE FLOUNDER.

Pleuronectes Japonicus. *P. lingua aspera. Lin. Syst. Nat. Gmel. p.* 1240. *Houttuyn. act. haarl.* 20. 2. *p.* 317.
Flounder with rough tongue.

Length about six inches: colour brownish above, whitish beneath: rays of the dorsal and anal fin so extremely numerous as to be with difficulty counted: tongue remarkably rough: native of the Japanese seas.

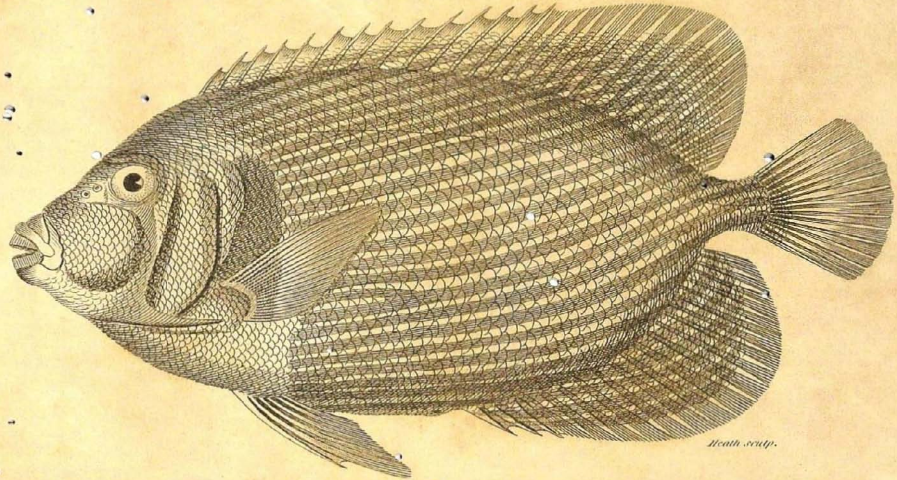
CHÆTODON. CHÆTODON.

Generic Character.

Caput parvum: *Os* exiguum: *Dentes* conferti, flexiles, setacei.
Membr: branch: radiis tribus ad sex.
Corpus latum, compressum, pluribus fasciatum; pinna *dorsi anique* basi crassa, carnosa, squamosa.

Head small: *Mouth* small: *Teeth* close-set, flexile, setaceous.
Gill-Membrane three, four, five, or six-rayed.
Body broad, compressed, and, generally, fasciated: *dorsal* and *anal* fin, thick, fleshy, and scaly at the base.

THE numerous genus Chætodon is, in a general view, distinguished by the great depth and highly compressed form of the body, which, in most species, is beautifully variegated by transverse, oblique, or longitudinal bands, and covered with strong scales, finely denticulated on the margins: the dorsal and anal fin are remarkably broad, scaly at the base or lower part, and in many species, of an unusual length, and furnished, as in some of the Dories, with rays projecting beyond the membrane: the teeth are, in general, small, very slender, and flexible. The species are very numerous, and are mostly natives of the Indian and American seas, being very rarely, if ever, taken in those of Europe.



Heath sculp.

IMPERIAL CHAETODON.

1803. July 1 London, Publish'd by G. Kearsley, Fleet Street.

With single dorsal fin, and even or rounded tail, or at most, but very slightly inclining to crescent-shaped in some few species.

IMPERIAL CHÆTODON.

Chætodon Imperialis. *C. flavus, lineis numerosissimis longitudinalibus obliquis cæruleis.*
Yellow Chætodon, with very numerous oblique longitudinal blue lines.
Chætodon Imperator. *Lin. Syst. Nat. Gmel. p.* 1255. *Bloch. t.* 194.

A MOST magnificent species, growing to the length of a foot or more: body oval; dorsal and anal fin broad, and scaled to a considerable distance from the base: gill-covers furnished on each side with a very strong spine: ground-colour of the animal golden yellow, longitudinally, but somewhat obliquely striped with very numerous bright-blue parallel rays. Native of Japan, where it is held in high esteem as an article of food, and is said to be superior to the Salmon in flavour.

PARU CHÆTODON.

Chætodon Paru. *C. nigricans, squamis aureo marginatis.*
Blackish Chætodon, with the scales bordered with a golden gloss.
Chætodon Paru. *Lin. Syst. Nat. Gmel. p.* 1256. *Bloch. t.* 197.

A HIGHLY elegant species, though inferior in beauty to the preceding: grows to about the same size, and is of an oval shape, the dorsal and anal fins extending at their tips far beyond the thicker or scaly part of the fin: on the gill-covers a strong spine: colour of the whole animal black, accompanied by a strong golden tinge, most conspicuous toward the edges of the scales, which are large and rounded: native of the South-American seas.

ANGEL CHÆTODON.

Chætodon Catesbeii. *C. viridi-aureus, squamis squamulosis.*
Gold-green Chætodon, with the scales covered by smaller ones.
Angel-Fish. *Catesb. carol.* 2. *t.* 31.

DESCRIBED and figured by Catesby in his Natural History of Carolina; who names it the Angel-Fish, and represents it of a golden-green colour, with the pectoral, ventral fins, and tail of a bright orange-colour; the dorsal and anal violet-blue at the base, and bright crimson towards the tips: these fins extend to a great distance, reaching far beyond the tail: the body is very broad, terminating very

abruptly on the hind part, from the middle of which the base of the tail suddenly emerges: the gill-covers are armed with several strong spines, and the whole body is covered with moderately large rounded scales, which are themselves covered with much smaller ones. Native of the American seas, and according to Catesby, common off Carolina and the Bahama isles, where it is much esteemed for its delicacy.

CILIATED CHÆTODON.

Chætodon Ciliaris. *C. subargenteus, squamis ciliatis.*
Silvery-grey Chætodon, with ciliated scales.
Chætodon ciliaris. *Lin. Gmel. p.* 1252. *Bloch. t.* 214.

Length about a foot: body oval; dorsal and anal fin extended into sharp semilunar extremities, projecting beyond the tail: colour of the whole animal silvery-grey, with a more dusky tinge on the back, and an annular black spot placed immediately before the origin of the dorsal fin: scales of moderate size, and all ciliated round their edges with numerous hair-like processes, which take their rise from the middle of each scale: gill-covers furnished at the middle with a strong spine, accompanied with a few smaller ones. Native of the Indian seas.

FASCIATED CHÆTODON.

Chætodon Fasciatus. *C. corpore oblongo-ovato albido, fasciis pluribus transversis cæruleis.*
Chætodon with oblong ovate body, marked by several transverse blue bands.
Chætodon fasciatus. *Bloch. t.* 195.
Chætodon Dux. *Lin. Gmel. p.* 1255.

A BEAUTIFUL species: shape oblong-ovate; colour white with a slight silvery cast, and a dusky tinge on the upper parts: body most elegantly banded by several broad, transverse, deep blue bands with brown edges: dorsal and anal fin moderately broad, but obtuse at their extremities, and not extending to the end of the tail: at the gill-covers a very strong spine. Native of the Indian seas.

SURAT CHÆTODON.

Chætodon Suratensis. *C. corpore subrotundo-ovato subargenteo, fasciis transversis fuscis, maculaque utrinque pectorali nigra.*
Silvery-grey Chætodon with roundish-ovate body banded with brown, and marked on each side by a black pectoral spot.
Chætodon Suratensis. *Bloch. t.* 217.

SHAPE roundish-oval: colour silvery grey, darker on the back and fins: body marked by six or seven moderately broad, transverse, brown bands, and at the base of the pectoral fins by a semi-lunar black spot: dorsal and anal fin broadish at the extremities, but obtuse, and not reaching to

the tip of the tail: scales moderately large, and each marked in the middle by a bright spot. Native of the Indian seas, growing to the length of ten or twelve inches.

KLEINIAN CHÆTODON.

Chætodon Kleinii. *C. flavescens, corpore rotundato-ovato, capite fascia transversa nigra.*

Yellowish Chætodon, with round-ovate body, and head crossed by a black band.

Chætodon Kleinii. *Bloch. t.* 218. *f.* 2.

Size rather small: shape round-ovate: colour pale yellow, with a dusky tinge on the back, and a silvery cast on the sides: from the origin of the dorsal fin to that of the pectoral fins, runs a slightly curved, blackish, or deep-brown stripe, passing through the eye in its course: dorsal and anal fin rather broad at the ends, but not projecting so far as the end of the tail: scales large and rounded. Native of the Indian seas.

EIGHT-BANDED CHÆTODON.

Chætodon Octofasciatus. *C. subargenteus, corpore rotundato-ovato, fasciis octo angustis transversis nigris.*

Silvery-grey Chætodon, with round-ovate body crossed by eight narrowish black bands.

Chætodon octofasciatus. *Lin. Gmel. p.* 1262. *Bloch. t.* 215. *f.* 1.

SIZE rather small: shape, round-ovate: colour whitish or silvery-grey, brownish on the back: body marked by eight rather narrow, blackish or deep-brown, transverse bands disposed in pairs, viz. one pair across the head and gills, the first line passing through the eye: two pair across the middle of the body, and the remaining pair across the end of the body and tail: lateral line curving in the direction of the back, and formed by a row of round scales: dorsal fin almost completely scaled, and furnished at the fore-part with extremely strong spines; rounded at the hind-part and slightly stretched towards the tail, but not reaching farther than the middle of that part: anal fin of similar shape; and furnished with three very strong short spines at its origin. Native of the Indian seas. This species was arranged by Linnæus, in the twelfth edition of the Systema Naturæ, in the genus Perca, under the name of Perca nobilis.

ANNULAR CHÆTODON.

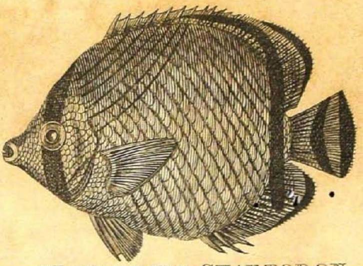
Chætodon Annularis. *C. luteus, corpore rotundo-ovato, fasciis sex obliquis longitudinalibus curvatis annuloque postoculari cæruleis.*

Deep yellow Chætodon, with round-ovate body, marked by six longitudinal curved blue stripes and a blue ring behind the eye.

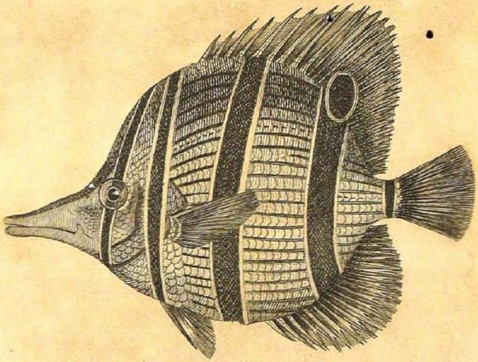
Chætodon annularis. *Lin. Gmel. p.* 1262. *Bloch. t.* 215.

SHAPE round-oval: colour yellow or pale fulvous, with six oblique, longitudinal, curved, bright-blue lines or narrow stripes, of which the four superior are continued into the dorsal fin, at the hind part of which they meet in an angle: the two lower stripes run along the bottom of the abdomen: the dorsal fin is broad at its hind-part, and projects above the tail into an angular form: the anal fin is rounded at the hind-part: on each side the body, beyond the eye, is a bright-blue circle, and at the bottom of the gill-covers is a strong spine. Native of the Indian seas: length about a foot.

47.



WANDERING CHAETODON.



ROSTRATED CHAETODON.

Heath sculp.

ANNULAR CHAETODON.

1808 July 1 London Published by G Kearsley Fleet Street

COLLARED CHÆTODON.

Chætodon Collaris. *C. corpore rotundo-ovato albido, capite fusco fasciis duabus lacteis, fuscia caudali nigra.*

Whitish Chætodon, with round-ovate body, brown head marked by two milk-white bars, and tail crossed by a brown band.

Chætodon collare. *Lin. Gmel. p.* 1263. *Bloch. t.* 216.

SHAPE round-ovate; colour blueish or greyish white, tinged with brown on the back: head deep-brown, with two milk-white perpendicular stripes, the former immediately before the eyes, the latter behind: the mouth is also white: the dorsal and anal fin are shaped nearly as in the C. octofasciatus, and the tail is marked across the middle by a brown bar: the body is covered with large scales. Native of Japan; length of the specimens described by Seba, Bloch, &c. about six inches.

BLACK-AND-WHITE CHÆTODON.

Chætodon Mesoleucos. *C. corpore subrotundo-ovato nigricante, anterius albo, fascia capitis nigra.*

Roundish-ovate blackish Chætodon, with the fore-parts white, and a brown bar across the head.

Chætodon mesomelas. *Lin. Gmel. p.* 1263.

Chætodon mesoleucus. *Bloch. t.* 116.

SHAPE roundish ovate, but less so than the preceding species: colour of the body, dorsal, and anal fin deep-brown, but the fore-part of the body

gradually softens into white: down each side of the head, through the eyes, runs a deep-brown band: the pectoral, ventral fins, and tail are white: the body is covered with moderately small scales, and at the lower part of the gill-covers is a very strong spine: the shape of the fins resembles those of the major part of this division. Native of Japan.

ARGUS CHÆTODON.

Chætodon Argus. *C. subargenteus, maculis numerosis rotundis fuscis, corpore subquadrato-ovati.*

Silvery-grey Chætodon with squarish-ovate body, marked with numerous round brown spots.

Chætodon Argus. *Lin. Gmel. Bloch. t.* 204.

General shape ovate, or rather squarish-ovate: colour silvery-grey, with a brownish cast on the upper parts, and the whole body, as well as part of the fins, marked by numerous round brown spots: scales very small: first rays of the dorsal fin moderately long, those on the middle part much shorter: terminal part both of dorsal and anal fin rounded and slightly dilated: tail even at the end, but not rounded: gill-covers perfectly smooth: native of the fresh waters of India.

BIMACULATED CHÆTODON.

Chætodon Bimaculatus. *C. albidus, corpore subrotundo ovato, capite elongato, fascia transversa nigra, pinna dorsali macula nigra alteraque dimidiata.*

Whitish Chætodon, with roundish-ovate body, elongated head crossed by a black bar, and dorsal fin marked by a black spot and a second dimidiated one.

Chætodon bimaculatus. *Bloch. t.* 219. *f.* 1.

SHAPE of the body roundish-ovate, but the head considerably lengthened, so as to form a kind of snout in front: colour white, with a slight cast of brown on the upper part and fins: scales very large: head marked on each side by a black or deep-brown stripe, beginning at the origin of the dorsal fin, and passing through the eyes downwards, under the throat: pectoral and ventral fins pale red: dorsal marked at the base of the hind-part, by a large, round black spot, bordered with white, and at its extreme edge by a much smaller half-spot of similar colours: native of the seas about Japan.

STRIPED CHÆTODON.

Chætodon Striatus. *C. albidus, corpore subrotundo-ovato, lineis longitudinalibus subfuscis, fasciisque quatuor transversis fuscis.*
Whitish Chætodon, with roundish body, marked by several longitudinal dusky lines, and by four transverse dusky bars.
Chætodon striatus. *Lin. Gmel. Bloch. t.* 1249.

Shape roundish ovate: colour whitish, tinged with yellowish brown on the upper parts, and marked by four distant brown bands, the narrowest of which runs on each side the head, passing through the eyes to the breast; the two next, which are much broader, pass, at nearly equal distances, across the body, and the third crosses the setting on of the tail: the pectoral and ventral fins are of a deep brown, and the dorsal, anal fin, and tail, are deeply edged with the same colour: the body is covered with scales of moderate size, and is marked by several narrow longitudinal dusky streaks between the rows of scales. Native of the Indian and American seas.

DIVIDED CHÆTODON.

Chætodon Bicolor. *C. corpore oblongo-ovato, dimidio antico lacteo, postico fusco.*
Chætodon with oblong-ovate body, the anterior half milk-white, the posterior brown.
Chætodon bicolor. *Lin. Bloch. t.* 205.

A species of moderate, or rather smallish size, and easily distinguishable by the remarkable distribution

of its colours, the fore-part of the body being milk-white; the hind-part reddish brown, passing through the dorsal and anal fins, which are both edged with white: the tail, pectoral, and ventral fins are also white: the gill-covers are furnished with a very strong spine: the dorsal and anal fins are nearly covered with scales, and are of moderate breadth, extending into an acuminate form above and below the tail, but not reaching to the tip: the body is of an oblong-ovate shape. Native of the Indian and American seas.

SINGLE-SPOTTED CHÆTODON.

Chætodon Unimaculatus. *C. argenteus, supra cærulescens, corpore subrotundo-ovato macula utrinque versus dorsum nigra.*

Silvery Chætodon with roundish-ovate body marked on each side towards the back by a black spot.

Chætodon unimaculatus. *Lin. Gmel. Bloch. t.* 201.

Shape roundish-ovate: colour silvery white, with a few obliquely transverse yellow streaks, and tinged on the upper parts with blue-grey: body covered with large scales, and marked on each side, towards the back, with a large oval black or deep-brown spot: the head is marked, as in some others of this tribe, by a deep-brown band, running across the eyes: the base of the tail, and the edges of the dorsal and anal fin are also brown: the tail is even at the end, or, at most, so very slightly lunated as to be scarce perceptibly so. Native of the Indian seas.

WANDERING CHÆTODON.

Chætodon Vagabundus. *C. subluteus, corpore subrotundo-ovato, longitudinaliter striato, postice fascia transversa nigra.*

Yellowish Chætodon, with roundish-ovate body longitudinally striated, and marked at the hind-part by a transverse black bar.

Chætodon vagabundus. *Lin. Bloch. t.* 204.

Shape roundish-ovate: head lengthened a little in front: body covered with large scales, and of a pale orange-colour, marked with numerous oblique narrow streaks running in the interstices of the scales: over the shoulders are several similar streaks in an opposite direction, or crossing the former: head marked by a black band running across the eyes, as in many others: end of the body, at the setting on of the tail, marked by a similar band, which runs both into the dorsal and anal fin: tail crossed in the middle by a black or deep-brown crescent, and bordered at the tip with the same colour. Native of the Indian seas, and said to be in considerable estimation as a food.

OCELLATED CHÆTODON.

Chætodon Ocellatus. *C. corpore ovato argenteo, capite fascia nigra, pinna dorsali macula rotunda nigra albo marginata.*

Chætodon with silvery-white ovate body, head crossed by a black bar, and dorsal fin marked by a round black spot edged with white.

Chætodon ocellatus. *Bloch. t.* 211. *f.* 2.

A SMALL species: length about four inches: shape ovate: colour silvery white, with a few oblique yellow streaks: dorsal and anal fin broad, rounded at the hind part, and very scaly at the base, dorsal marked with a large, round deep-black spot, edged with white, head marked by a transverse black band, running across the eyes. Native of the Indian seas.

ROSTRATED CHÆTODON.

Chætodon Rostratus. *C. corpore subrotundo-ovato albido, fasciis transversis fuscis, rostro longo, pinna dorsali macula nigra.*

Whitish Chætodon, with roundish-ovate body crossed by brown bands, long snout, and dorsal fin marked by a black spot.

Chætodon rostratus. *Lin. Bloch. t.* 202. *f.* 1.

Chætodon Enceladus. *Nat. Misc.* 2. *pl.* 67. Jaculator. *Phil. Trans.* 1765.

SHAPE roundish-ovate: length about six or eight inches: snout lengthened into a tubular form: colour of the body whitish, with a dusky tinge on the back, and marked by five transverse, and nearly equidistant, brown bands, with milk-white edges: the first band, which is narrower than the rest, passes across the head, through the eyes, the three

next across the body, and the last across the base of the tail: the dorsal and anal fin are very broad at the hind part, and the dorsal is marked in that part by a large black spot, bordered with white: the gill-covers are scaly, but destitute of spines.

This fish is a native of the fresh waters of India, and is celebrated for the extraordinary manner in which it takes its prey, which chiefly consists of the smaller kind of flying insects: when it observes one of these, either hovering over the water, or seated on some aquatic plant, it shoots against it from its tubular snout a drop of water, with so sure an aim as generally to lay it dead, or at least stupified, on the surface. In shooting at a sitting insect, it is commonly observed to approach within the distance of from six to four feet, before it explodes the water. When kept in a state of confinement in a large vessel of water, it is said to afford high entertainment by its dexterity in this exercise, since if a fly or other insect be fastened to the edge of the vessel, the fish immediately perceives it, and continues to shoot at it with such admirable skill as very rarely to miss the mark.

It may not be improper to observe, that this faculty is not entirely confined to the present fish, but takes place in some few others belonging to very different genera.

ORB CHÆTODON.

Chætodon Orbis. *C. corpore orbiculari, radiis anterioribus pinnæ dorsalis elongatis.*

Chætodon with orbicular body, and the first rays of the dorsal fin elongated.

Chætodon Orbis. *Bloch. t.* 202. *f.* 2.

A SMALL species: length about four inches: shape of the body remarkably orbicular: colour blueish-grey above, yellowish-white beneath: body covered with large scales: ventral fins narrow and falciform: first rays of the dorsal running beyond the membrane, as in some of the Dories: side-line curving irregularly, with a kind of double descent before it reaches the tail. Native of the Indian seas.

BUTTERFLY CHÆTODON.

Chætodon Capistratus. *C. corpore ovato fulvo, lineis obliquis oppositis notato, postice macula nigra, capite fascia fusca.*

Chætodon with ovate fulvous body, marked by oblique opposite lines, a black spot on the hind-part, and head crossed by a brown bar.

Chætodon capistratus. *Lin. Bloch. t.* 205. *f.* 2.

A VERY small species, length about three inches and a half: shape ovate: dorsal and anal fins gradually dilated and rounded at their extremities: ground-colour of the whole animal pale orange, the body being covered with scales of moderate size, and marked on each side the lateral line by

numerous oblique dusky lines, running towards the tail, and forming so many acute angles along the sides of the body: the head is crossed by a brown band passing through the eyes: the base of the tail is crossed by a smaller bar; the dorsal and anal fin are edged on their broadest part by a brown margin, and on each side the body, a little above the tail, is a large, round, black spot, with a white border. Native of the American seas, and found about the coasts of Jamaica, &c.

CHALYBEAN CHÆTODON.

Chætodon Faber. *C. subargenteus, cæruleo tinctus, pinnis fasciisque corporis sex transversis cæruleis.*

Subargenteous Chætodon, tinged with blue, with blue fins, and six transverse blue bands.

Chætodon Faber. *Bloch. t.* 212.

Shape roundish ovate: length about twelve inches: ground-colour silvery white, but with a strong tinge of dusky blue on the upper parts, and marked by six unequal, dark-blue, transverse bands, of which the first, which is narrow, passes across the head, through the eyes; the next, which is much broader, through the body; the third passes only half way down from the back; the fourth completely through the body; the fifth, which is narrower, across the end of the body; and the sixth, which is the narrowest of all, across the base of the tail: all the fins are of the same deep-blue colour with the bands, and the hind-parts of

the dorsal and anal fin extend in a somewhat falcated manner, as far as the end of the tail: the body is covered with scales of moderate size, and the gill-covers are destitute of spines. Native of the American seas.

ARCUATED CHÆTODON.

Chætodon Arcuatus. *C. nigricans, fasciis angustis, transversis, arcuatis, niveis.*

Blackish Chætodon, with narrow, arcuated, transverse snow-white bands.

Chætodon arcuatus. *Lin.* *Bloch. t.* 201. *f.* 2.

Shape of the body ovate; dorsal and anal fin very broad, and terminating in sharpened or slightly falciform extremities, but not extending so far as the tail: colour of the whole fish very deep black-brown, varied by arcuated milk-white transverse bands, which are five in number; the first passing across the mouth, and the next across the thorax, the two next across the body, dorsal, and anal fin, and the last across the tail, which is also tipped with a milk-white margin: gill-covers tipped with a strong spine. Native of the South-American seas: general length from three to six inches.

BIFASCIATED CHÆTODON.

Chætodon Bifasciatus. *C. albo-cærulescens, corpore suborbiculari, fasciis duabus fuscis, radio quarto pinnæ dorsalis longissimo.*

Blueish-white Chætodon, with suborbicular body marked by two brown bars, and the fourth ray of the dorsal fin extremely long.

Chætodon macrolepidotus. *Lin. Bloch. t.* 200. *f.* 1.

Shape of the body round-oval; or even orbicular: colour blueish grey above, silvery-white beneath: dorsal and anal fin of moderate breadth, and not extending to the end of the tail; but the fourth ray of the dorsal fin, which is very thick and strong, is extended to a vast distance beyond the rest, reaching considerably farther than the tip of the tail, over which it passes in a curved direction: across the body, are two very broad blackish-brown bands, viz: one from the origin of the dorsal fin to the ventral fins; the other from the middle of the dorsal fin to the bottom of the anal; passing through both: this species is the *C. macrolepidotus* of Linnæus; but as the scales are not so large as in some other species since discovered, I have given it a different trivial name: it is a native of the Indian seas, where it is said to arrive at a very considerable size, sometimes weighing upwards of twenty pounds, and to be much esteemed as a food, resembling the Sole in delicacy.

HORNED CHÆTODON.

Chætodon Cornutus. *C. albo-cærulescens, corpore elevato-orbiculari, antice fasciis duabus, postice unica nigris, radio tertio pinnæ dorsalis longissimo.*

Blueish-white Chætodon, with high-orbicular body, crossed on the fore-part by two, on the hind-part by one black band, and the third ray of the dorsal fin extremely long.

Chætodon cornutus. *Lin.* *Bloch. t.* 200. *f.* 2.

Shape of the body nearly orbicular, but deeper than long, or measuring more from the back to the abdomen than from head to tail: dorsal and anal fins produced in a falciform manner, so as to reach beyond the tail, more especially the dorsal fin, several rays of which, from about the third to the eighth, are gradually extended beyond the length of the rest, though still preserving the outline of the fin; but the third or longest ray curves over the tail to a great distance downwards: colour of the body silvery; with a blueish cast on the upper parts, and marked by three broadish black zones, two passing across the thorax, so as to represent a double band, and the other passing across the hind part of the body, dorsal, and anal fin: tail black, arched by a narrow white crescent near the end: scales on the body rather small: snout rather produced, but in a much less degree than in the *C. rostratus*: over each eye is generally a small pointed or horn-shaped process, which in the younger specimens is scarce perceptible; native of the Indian seas: general length from four to six inches.

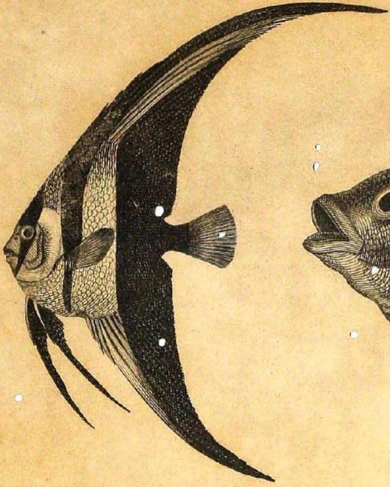
BAT CHÆTODON.

Chætodon Vespertilio. *C. albidus, corpore elevato-orbiculari, pinna dorsali analique maximis, falcatis.*

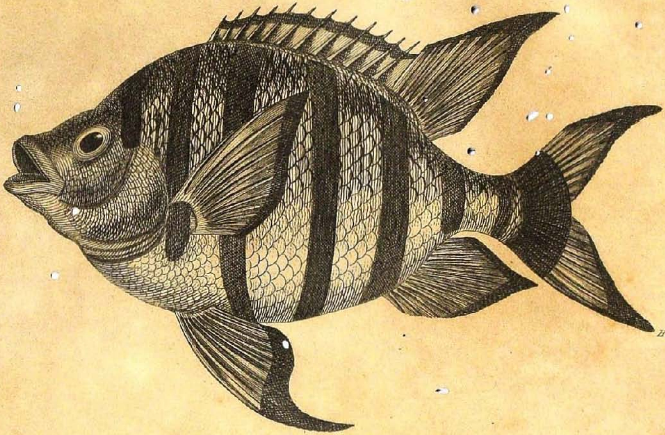
Whitish Chætodon, with high-orbicular body, and extremely large falcated dorsal and anal fin.

Chætodon Vespertilio. *Lin.* *Bloch. t.* 199. *f.* 2.

A very singular species, and the most remarkable of all others for the vast extent as well as breadth of the dorsal and anal fin, both which nearly equal the body itself in size, and are of a somewhat triangular shape, the points extending, both above and below, to about the same distance with the tip of the tail: the body in shape bears a considerable resemblance to some of the silvery Dories, the head sloping suddenly down and the general form being similar: the colour silvery, with rather small scales: the base of the tail marked by a black bar: native of Japan: length of a specimen figured by Dr. Bloch, about four inches from head to the end of the tail, but the depth, measured from the opposite tips of the dorsal and anal fins, about six inches and a half.



LONG-FINNED CHAETODON.



Heath sculp.

BORDERED CHAETODON.

1803 July 1. London Publish'd by G. Kearsley Fleet Street.

LONG-FINNED CHÆTODON.

Chætodon Teira. *C. albus, corpore elevato-orbiculari, pinna dorsali analique magnis, falcatis, longissimis.*

White Chætodon, with high-orbicular body, and large, extremely long, falcated, dorsal and anal fin.

Chætodon Teira. *Lin.* *Bloch. t.* 199. *f.* 1.

General shape similar to that of the preceding species, and the dorsal and anal fin even considerably longer in proportion, but not so broad: colour of the body silvery-white, with rather small scales, and variegated by three broad, transverse black bands, the first of which runs across the head and eyes, the second across the fore-part of the body and dorsal fin, and the third across the hind part of the body, dorsal, and anal fin; the whole forming an appearance singularly elegant: the ventral fins, which are of a lanceolate shape, are also black. This curious fish is a native of the Indian and Arabian seas, and is said to arrive at a considerable size, though the specimens usually seen are but small.

RED-STRIPED CHÆTODON.

Chætodon Setifer. *C. flavescens rubro-striatus, ocello setaque ad pinnam dorsi.*

Yellowish Chætodon, with numerous red stripes on the body, and an eye-shaped spot and bristle on the dorsal fin.

Chætodon setifer. *Bloch. t.* 446. *f.* 1.

A HIGHLY beautiful species: shape of the body round-ovate, but with the head slightly produced: colour pale yellow, with a strong tinge of crimson towards the back, and beautifully marked in different directions, with numerous crimson stripes, some running obliquely across the sides, and others in an opposite direction across the fore part of the back: scales very large: across the head a broad, black band, passing through the eyes: on the hinder or rounded part of the dorsal fin a large round black spot, bordered with white; over which passes a long setiform single ray, reaching beyond the tip of the tail, which is terminated by a black edge, as are likewise the rounded part of the dorsal and anal fin. Native of the Indian seas: length about six inches.

SICKLE CHÆTODON.

Chætodon Falcula. *C. albo-flavescens, capite fascia curvata nigra, corpore duabus brevibus falciformibus.*
Yellowish-white Chætodon, with a curved black band across the head, and two short sickle-shaped bands across the body.
Chætodon Falcula. *Bloch. t. 426. f. 2.*

In shape and general appearance very nearly allied to the *C. setifer*, but differs in colours, and in the want of the lengthened ray at the hind part of the dorsal fin: colour white, with a tinge of yellow: scales very large, a black bar across the head, as in the preceding: a second, of a curved form crossing the middle of the body, from the dorsal fin downwards, but vanishing before it reaches the abdomen, and a third still more curved, or of a shape somewhat resembling a sickle, crossing the hind-part of the body, from the middle of the dorsal fin, and like the former vanishing before it reaches the abdomen: the base of the tail is crossed by a black bar, and tipped with black. Native of the Indian seas.

CHARIOTEER CHÆTODON.

Chætodon Auriga. *C. albidus, oblique fasciatus, radio pinnæ dorsalis quinto in filum producto.*

White Chætodon, obliquely striped, with the fifth ray of the dorsal fin lengthened into a filament.

Chætodon Auriga. *Forsk. F. Arab. p.* 60. *Lin. Gmel. p.* 1266.

Body subrhomboidal, compressed, and about five inches long: teeth in several rows: general colour blueish white, with several oblique, parallel, dusky streaks: the first six dorsal ones descend forwards; the remaining ten pass perpendicularly backwards: hind part of the body, and tail fulvous: head flattish above, and marked by four transverse fulvous bands: dorsal fin edged with black at the back part: anal fin striped with black and pale yellow: tail marked with a fulvous crescent directed backwards, and tipped with white. Native of the Arabian seas: described by Forskal.

ARUAN CHÆTODON.

Chætodon Aruanus. *C. argenteus, corpore ovato-oblongo, fasciis tribus nigris.*

Silvery Chætodon, with ovate-oblong body crossed by three black bars.

Chætodon Aruanus. *Bloch. t.* 198. *f.* 2.

Body ovate-oblong: colour white, with a brownish cast on the upper parts; and marked by three

broad transverse black bars, the first of which crosses the head, the second the middle, and the third the hind-part: both these latter bars pass through the dorsal and anal fin as well as the body: the ventral fins are black: the scales on the body are rather large than small, and the gill-covers are destitute of spines. Native of the Indian and Arabian seas.

In the Museum Adolphi Friderici this species is named *arcuatus*, but as the author had before described a different species under that name, it is to be presumed, according to the opinion of Dr. Bloch, that *aruanus* is the true reading. Perhaps from the Aroo islands among the Moluccas.

CHINESE CHÆTODON.

Chætodon Chinensis. *C. albo-flavescens, corpore oblongo, fasciis pluribus fuscis, macula operculorum rotunda.*

Yellowish-white Chætodon, with oblong body crossed by several brown stripes, and a round spot on the gill-covers.

Chætodon Chinensis. *Bloch. t.* 218. *f.* 1.

Body oblong, and the whole habit more resembling that of the generality of fishes than of the major part of the Chætodons: colour dull yellowish white, brownish towards the back, and transversely barred from head to tail with several deep-brown stripes, some of which appear double: on the gill-cover a large round spot, and behind the eyes two small longitudinal streaks of the same colour: scales moderately large: dorsal and anal

fin resembling those of the generality of fishes. Native of China.

SPOTTED CHÆTODON.

Chætodon Maculatus. *C. flavus, corpore oblongo-ovato longitudinaliter fusco maculato, fasciisque pallidioribus fuscis.*

Yellow Chætodon, with oblong-ovate body, spotted longitudinally with brown, and crossed with bands of paler brown.

Chætodon maculatus. *Bloch. t.* 427. *f.* 2.

SHAPE oblong-ovate, and in habit resembling some of the Carp tribe: colour yellow, marked by a longitudinal row of five or six large round brown spots, some of those on the fore and hind part of the body being partly obscured by a transverse bar or cloud of a similar colour passing over each: the middle spot is larger than the rest, and has no accompanying bar: the gill covers are smooth and scaly, the fins simple and of a bright yellow: the scales on the body are of moderate size: the tail rather large, and nearly even at the end, though perhaps, a very little inclining to a lunated shape. Native of India and South America, inhabiting fresh waters.

BIACULEATED CHÆTODON.

Chætodon Biaculeatus. *C. argenteo-cærulescens, corpore oblongo, fasciis tribus distantibus, angustis, ferrugineis.*
Blueish-silvery Chætodon, with oblong body, crossed by three distant, narrow, ferruginous bands.
Chætodon biaculeatus. *Bloch. t. 219. f. 2.*

Shape oblong, with the back slightly sinking towards the middle: colour silvery, with a cast of blue, and crossed by three narrow, distant, ferruginous bands, the first across the gill-covers, the second across the middle, and the third across the end of the body: scales rather small: on the gill-covers, behind the eyes, a strong spine: dorsal and anal fins but slightly dilated at the hind part. Native of the Indian seas.

GOLDEN-SIDE CHÆTODON.

Chætodon Maculosus. *C. cinereus, anterius maculis transversis cæruleis, posterius magna transversa aurea.*
Grey Chætodon, marked with transverse blue lines on the fore-part, and with a large transverse gold-coloured spot on the hind-part.
Chætodon maculosus. *Forsk. F. Arab. p. 62. Lin. Gmel. p. 1267.*

Shape ovate-oblong: ground-colour bright glossy grey: towards the beginning of the back several transverse blue streaks: on the gill-covers several blue spots: towards the hind part of the body a large transverse gold-coloured patch or bar, some-

what broken into the ground-colour: tail spotted with yellow: gill-covers furnished with a strong spine. Native of the Arabian seas: described by Forskal.

LUNULATED CHÆTODON.

Chætodon Lunulatus. *C. fusco-virescens, lunula superciliari nigra, pectorali duplicata.*

Brownish-green Chætodon, with black crescent over the eyes, and a double one near the breast.

Pomacentre Croissant. *Cepede. 4. p.* 511.

Described by Cepede from the MSS. of Commerson: back elevated: snout projecting, with the upper lip extensile, and shorter than the lower: general colour dusky yellowish green: above each eye a black crescent: a double crescent of the same colour passing in an oblique direction from the pectoral fins to the middle of the back: a black spot on each side the tail, which is crossed by a black bar: a black streak at the extremity of the dorsal and anal fin, and a few longitudinal purple streaks on the abdomen. Native of the Indian seas. Shape of the tail not mentioned.

GOLDEN CHÆTODON.

Chætodon Aureus. *C. luteus, corpore ovato, pinna dorsali analique magna, falcato-elongatis, apice viridibus.*

Gold-yellow Chætodon, with ovate body, and large, elongated, and falcated dorsal and anal fin green towards the extremities.

Chætodon aureus. *Bloch. t.* 193. *f.* 1.

CONSIDERABLY allied in point of habit to the Angel Chætodon, having a great breadth of body, with far-extended, falciform dorsal and anal fin, reaching considerably beyond the tail: colour of the body bright gold-yellow, shaded with orange on the upper parts: fins and tail yellow, at the base, gradually changing into green towards the extremities: at the bottom of the gill-covers a very strong spine: body and bases of the fins covered with middle-sized scales: lateral line curving in the direction of the back. Native of the American seas, growing to the length of a foot or more.

ASFUR CHÆTODON.

Chætodon Asfur. *C. niger, fascia transversa lunari-cuneata flava. Forsk. F. Arab. p.* 1267.

Black Chætodon, with transverse, lunar-cuneated, yellow band.

Chætodon Asfur. *Lin. Gmel. p.* 61.

OBSERVED, and slightly described by Forskal: trunk oval; teeth numerous, filiform, and flexile: anterior opercula furnished with a strong spine:

general colour black, with a transverse sublunar yellow band in the middle of the body, the horns pointing backward: dorsal and anal fin falcated: tail fulvous, rounded, with a black margin: lateral line near the back: scales rhomboid, and finely toothed. Native of the Arabian seas.

VAR.

Of a blueish colour, with violet streaks and bands, disposed in an oblique direction. Observed by Forskal about the Arabian coasts, among corals, &c. the flesh is said to be bitter.

GEOMETRICAL CHÆTODON.

Chætodon Geometricus. *C. fuscus, albo variatus, lateribus circulis pluribus concentricis.*

Dusky Chætodon, with white variegations, disposed on the sides into several concentric circles.

L'Holocanthe geometrique. *Cepede.* 4. *p.* 537

Douwing formose. *Renard.* 1. *pl.* 5. *f.* 34.

Slightly described by Cepede, from the suspicious authority of Renard: it is named from the geometrical regularity of its pattern, which on a dusky ground exhibits on each side of the body seven or eight concentric white circles, of which the three or four interior are complete, the rest more or less broken: the head is streaked with various lines of the same colour. Native of the Indian seas.

CHÆTODON TRIFASCIATUS.

Chætodon Trifasciatus. *C. longitudinaliter striatus, fasciis tribus capitis nigris. Park. Lin. Trans. vol. 3. p. 34.*
Longitudinally striated Chætodon, with three black bands on the head.

Length three inches: colour pale or brownish: body marked with sixteen longitudinal dusky stripes, and covered with rather large, ciliated scales: on the dorsal fin a black band, edged with yellow; another at the base of the anal fin, and a third through the middle of the tail: on the head three black bands. Observed by Mr. Mungo Park about the coast of Sumatra.

GREAT-FINNED CHÆTODON.

Chætodon Pinnatus. *C. griseus, fascia frontali apiceque caudæ albis, pinna dorsali analique maximis falcatis.*
Grey Chætodon, with the front band and tip of the tail white, and extremely large falcated dorsal and anal fin.
Chætodon pinnatus. *Lin. Gmel.*

In habit greatly resembling the *Bat Chætodon*, but with the points of the fins more extended: colour grey, with a white band across the head, and the tail tipped with white: scales rather large: described by Linnæus in the Museum Adolphi Friderici. Native of the American and Indian seas.

CHILI CHÆTODON.

Chætodon Chilensis. *C. aureus, fasciis quinque discoloribus, cauda integra, spinis dorsalibus undecim. Molin. Chil. p. 200. Lin. Gmel. p.* 1264.

Golden Chætodon, with five coloured bands, even tail, and eleven dorsal spines.

Native of the American seas. Observed by Molina about the coasts of Chili. Length twelve inches: shape oval: snout lengthened: scales small: head crossed by a black band; body by two brown ones, and tail by one cinereous and one black band: dorsal fin large and yellow: tail silvery.

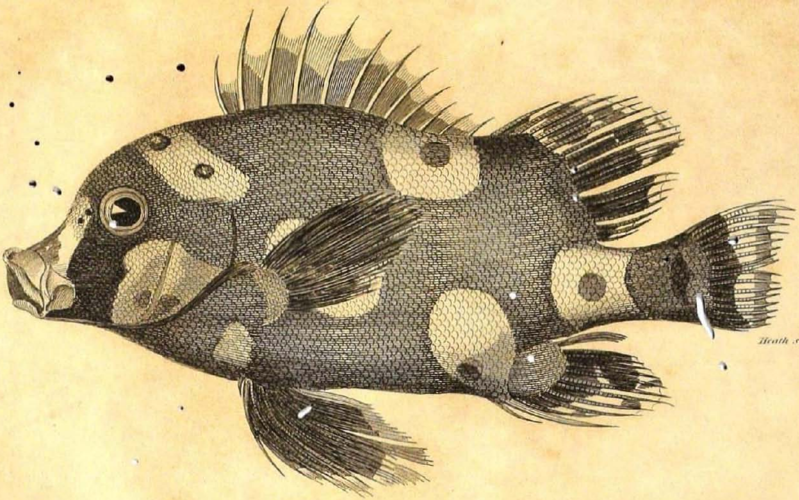
PLEAT-NOSE CHÆTODON.

Chætodon Plectorhinchus. *C. nigricans, maculis albis nigro-maculatis, naso plicato.*

Blackish Chætodon, with white patches spotted with black, and pleated snout.

Le Plectorhinque Chetodonoide. *Cepede.* 3. *p.* 135.

Described by Cepede from a specimen in the museum of the Prince of Orange, and, rather unnecessarily, ranked under a distinct genus, by the name of *Plectorhinchus*. Length, according to the plate, about five inches: habit that of the major part of the oblong-bodied Chætodons: colour blackish, or very dark, variegated with several large roundish, white or light-coloured patches, which



Heath sculp.

PLEAT-NOSE, CHAETODON.

1803 July 1 London Publish'd by G. Kearsley Fleet Street.

have generally one or more round black spots towards the middle: gill-covers without spine: mouth small, and concealed as it were among several membranaceous pleats into which the lips or edges are disposed: eyes rather large: scales small: tail even, or rounded: native region unknown.

With single dorsal fin, and forked or lunated tail.

GLAUCOUS CHÆTODON.

Chætodon Glaucus. *C. corpore rhombeo-ovato, supra cæruleo fasciis transversis nigris, subtus argenteo.*
Blue Chætodon, with rhombic-ovate body; the upper parts crossed by black bands; the sides and abdomen silvery.
Chætodon glaucus. *Lin. Gmel. Bloch. t.* 210.

A HIGHLY elegant species: body rhombic-oblong: colour on the upper parts fine blue, on the lower silvery white with a tinge of rose-colour: on each side the upper part of the body are five or six narrow black bands, descending only half way down: dorsal and anal fin blue, very long, slightly falcated, and reaching as far as the tips of the tail, which is very widely forked: at the origin of the dorsal fin are five pretty strong spines, but none on the gill-covers: the scales are of moderate size. This species is a native of the American seas, and grows to a considerable size, often exceeding a foot or eighteen inches in length, and is in considerable esteem as a food.

RHOMBOID CHÆTODON.

Chætodon Rhomboïdes. *C. corpore rhombeo-ovato, supra cæruleo-virescente, subtus flavescente, aculeis analibus duobus, dorsalibus quinque.*

Chætodon with rhombic-ovate body, greenish-blue above, yellowish beneath, two spines before the anal fin, and five before the dorsal.

Chætodon rhomboïdes. *Bloch. t.* 209.

Of a broader shape in proportion to its length than the former, and with a much larger and blunter head: colour on the upper parts grey or greenish blue, on the sides white, and on the abdomen pale yellow: the blue of the upper parts breaks into the white of the sides, in two or three acuminated bars or fasciæ reaching almost to the abdomen: the dorsal and anal fin are shaped as in the preceding species, but are much shorter, the points not reaching beyond the base of the tail, which is very widely forked: both fins and tail are blue, tinged with yellow at the base: pectoral and ventral fins yellow: scales moderately large: a few strong spines at the origin of the dorsal fin, but none on the gill-covers. Native of the American seas, where it grows to a very considerable size.

BORDERED CHÆTODON.

Chætodon Marginatus. *C. flavus, fasciis transversis fuscis, pinnis fusco-marginatis.*

Yellow Chætodon, with transverse brown bands, and fins bordered with brown.

Chætodon marginatus. *Bloch. t.* 207.

A SPECIES of considerable beauty: body ovate: colour on the upper parts yellow, on the lower dull rose-colour: back of a dusky cast: body crossed by seven or eight equidistant deep-brown bars, the last crossing the base of the tail: all the fins are yellow, bordered with deep brown: dorsal fin broad and falcated at its extremity, but not reaching to the end of the tail: anal fin much smaller than the dorsal and situated more backward, being placed beneath the dilated part of the dorsal: tail very much forked, the points turning inwards in a falcated manner: scales moderately large: none at the base of the fins: no spines, either at the origin of the dorsal fin or at the gill-covers. Native of the American seas: grows to the length of a foot, and is numbered among the edible fishes.

TRICOLOR CHÆTODON.

Chætodon Tricolor. *C. antice flavus, postice niger, cauda marginibusque pinnarum rubris.*

Yellow Chætodon with the hind-part black, the tail and fins bordered with red.

Chætodon tricolor. *Bloch. t.* 425.

A HIGHLY superb species, and remarkable for the singular disposition of its colours: general shape resembling that of the *golden*, *angel*, and *ciliated* Chætodons, but longer in proportion: colour of the fore-part golden-yellow, of the hind-part, except the tail, jet-black, the two colours abruptly separated, in an oblique direction: edges of the gill-covers and of all the fins bright red: tail yellow, growing red towards the end, and terminating in pretty long tips, but not deeply divided in the middle: scales rather large: falcatures of the dorsal and anal fin not reaching to the tips of the tail: at the gill-covers a very large, long spine: mouth surrounded by a black zone. Native of the Indian and American seas: length about a foot.

SPECKLED CHÆTODON.

Chætodon Guttatus. *C. griseo-albidus, corpore oblongo, maculis creberrimis rotundatis rufis.*

Whitish-grey Chætodon, with oblong body sprinkled with very numerous round rufous spots.

Chætodon guttatus. *Bloch. t.* 196.

Shape oblong, or resembling that of the generality of fishes: length about ten or twelve inches: colour grey, with a dusky tinge on the upper parts, and every where speckled, except on the head, pectoral, ventral, dorsal, and anal fins, with numerous, small, round, rufous spots: scales small: none at the bases of the fins: gill-covers smooth: dorsal and anal fin of moderate breadth: tail slightly inclining to a forked or rather lunated shape, and speckled like the body: native of Java.

This species is supposed by Dr. Bloch and Cepede to be the *Teuthis javus* of Linnæus (the genus *Teuthis* being now very properly absorbed in those of *Chætodon* and *Acanthurus*). The description however given by Linnæus of his *Teuthis javus* does not agree in the disposition of its colours with those of the present fish; being expressly said to be marked with longitudinal streaks: in this state it is also figured in the work of Gronovius. The Gronovian variety (if such it be) occurs in the British Museum, and perfectly corresponds with that author's figure, being marked by numerous abrupt or short longitudinal streaks.

PEACOCK CHÆTODON.

Chætodon Pavo. *C. fulvus, lateribus glaucis fusco transversim undulatis, capite cæruleo variegato.*

Fulvous Chætodon, with glaucous sides transversely undulated with brown, and head variegated with blue.

Chætodon Pavo. *Bloch. t.* 198.

In shape somewhat resembling the preceding, but the body not tapering so much on the hind part: length about seven inches: colour dull orange, the sides glaucous, and marked by numerous, slightly undulated brown lines passing over the scales, which are rather large: head and fore-parts sprinkled with numerous pale-blue spots: from each eye to the mouth three pale-blue streaks: dorsal and anal fin of moderate width and pointed at the ends: tail rather large and pretty deeply forked: native of the Indian seas.

CURASSAO CHÆTODON.

Chætodon Curacao. *C. corpore rotundato-ovato subargenteo, fasciis tribus obscuris semidecurrentibus, squamis magnis.*

Subargenteous Chætodon with round-ovate body, marked by three obscure semi-decurrent bands, and covered with large scales.

Chætodon Curassao. *Bloch. t.* 212.

Shape roundish-ovate: scales very large: colour blueish silvery white, tinged with brown on the upper parts, which colour descends on the sides in

the form of three obscure bands or clouds: fins and tail, pale brown: dorsal and anal of moderate breadth, and scaled at the base: gill-covers smooth, or without spines: tail moderately forked or divided: native of the American seas, where it often grows to a considerable size, and is esteemed as an edible fish.

BENGAL CHÆTODON.

Chætodon Bengalensis. *C. corpore subrotundato-ovato grisea, fasciis transversis fusco-flavescentibus.*

Grey Chætodon, with roundish-ovate body marked by yellowish-brown transverse bands.

Chætodon Bengalensis. *Bloch. t.*

In shape resembling the preceding, but not quite so broad or deep: colour grey, with five or six yellowish brown bars across the body: scales rather large, like those of a carp: dorsal and anal fin of moderate breadth, scaled at the base, and pointed at the tips: gill-covers smooth: tail of moderate size, and rather deeply, but not sharply forked: native of the Indian seas: length about six inches.

ROCK CHÆTODON.

Chætodon Saxatilis. *C. griseus, corpore ovato, fasciis quatuor pinnis caudaque nigricantibus.*

Grey Chætodon, with ovate body, and with the fins, tail, and four transverse bands blackish.

Chætodon saxatilis. *Bloch. t. 206. f. 2.*

Allied to the preceding species, but of a more oblong shape: colour grey, darkest on the back: body crossed by four equidistant blackish bars: fins and tail blackish: gill-covers smooth: tail deeply forked, with subfalcated lobes: scales rather large, and resembling those of a carp. Native of the South-American and Indian seas, seldom growing to a greater length than six or eight inches, and not much esteemed as a food.

MAURITIAN CHÆTODON.

Chætodon Mauritii. *C. supra cæruleus, fasciis sex angustis transversis decurrentibus nigris, subtus argenteus.*

Chætodon with the upper parts blue crossed by six narrow decurrent bands, the lower parts silvery white.

Chætodon Mauritii. *Bloch. t. 213.*

Shape similar to that of a carp: scales of moderate size: body dusky blue above, silvery white beneath: across the upper parts six narrow blackish bands, reaching almost to the abdomen: fins and tail brown: gill-covers smooth. Native of the Brasilian seas, growing to the length of two feet, and esteemed as a food. Described by Dr. Bloch

from the drawings and manuscripts of the celebrated Prince *John Maurice* of *Nassau-Sigen*, under whose conduct the Dutch, in the years 1637 and 1638, became possessed of the richest part of Brasil, where he afterwards resided some years in the character of Governor. During his residence he amused his hours of leisure in making drawings and composing descriptions of the most remarkable animals of the country: these drawings and manuscripts are preserved in the royal library at Berlin.

PUNCTATED CHÆTODON.

Chætodon Punctatus. *C. argenteus, fusco-punctatus, spinis pinnæ dorsalis octo, pinnis pectoralibus falcatis.*

Silvery Chætodon, speckled with dusky points, with eight rays in the dorsal fin, and falcated pectoral fins.

Chætodon punctatus. *C. spinis pinnæ dorsalis octo, pinnis pectoralibus falcatis. Lin. Gmel. p.* 1243.

Shape resembling that of a Carp: colour white or silvery, scattered over with dusky points: eyes red: lateral line curving upwards: the three first rays of the anal fin distant: in the dorsal fin are eight rays, in the caudal seventeen: native of the Indian seas?

ROUND CHÆTODON.

Chætodon Rotundus. *C. rotundatus cinereus, fasciis quinque pallidis. Lin. Syst. Nat. p.* 466.
Orbicular grey Chætodon, with five pale bands.

This seems a species very little known: from the name applied to it by Linnæus it should seem to have the body more orbicular in its outline than any other species.

SINGLE-SPOTTED CHÆTODON.

Chætodon Unimaculatus. *C. corpore rotundato-ovato griseo, macula utrinque prope dorsum ovata nigra, capite fascia transversa nigra.*
Grey Chætodon, with round-ovate body, marked on each side near the back with an oval black spot, and with a transverse black bar across the head.
Chætodon unimaculatus. *Bloch. t.* 201.

Body round-ovate: colour grey, with a moderately large oval black spot on each side, near the back; across the head a black bar, passing through the eye: dorsal and anal fin rounded and edged with black: scales rather large: gill-covers smooth. Native of India.

ORBICULAR CHÆTODON.

Chætodon Orbicularis. *C. corpore rotundato griseo punctis fuscis aspero, abdomine albido.*

Chætodon with orbicular body freckled with dusky specks, and whitish abdomen.

Chætodon orbicularis. *Forsk. F. Arab. p.* 59. *Lin. Gmel. p.* 1265.

Length about a foot: colour dusky grey; variegated with dusky specks, especially towards the back and tail: abdomen whitish, tinged behind with yellow: scales of moderate size: tail slightly divided. Native of the Arabian seas: observed by Forskal, who adds that it has something of the habit of a Pleuronectes.

SILVER CHÆTODON.

Chætodon Argenteus. *C. cauda bifida, spinis pinnæ dorsalis octo, pinnarum ventralium loco spinis duabus. Lin. Syst. Nat. Gmel. p.* 1242. *Am. Acad.* 4. *p.* 240.

Silvery Chætodon, with bifid tail, eight spines in the dorsal fin, and two spines in the place of ventral fins.

This, which appears to be an anomalous species, is said by Linnæus to differ from the rest of the genus in the defect of the pectoral fins, in place of which are two small spines: the first spines of the dorsal fin are so small as to be scarce perceptible. Native of the Indian seas.

LONG-SNOUTED CHÆTODON.

Chætodon Longirostris. *C. corpore rhombeo-oblongo subflavo, rostro elongato, pinna anali macula nigra.*

Chætodon with rhombic-oblong yellowish body, lengthened snout, and black spot on the anal fin.

Chætodon longirostris. *Lin. Gmel. Brouss. dec.* 1.

SHAPE oblong-rhomboid: head sloping, and produced into a cylindric snout, as in the *rostratus*, to which this species is allied: head brown above, and of a silvery flesh-colour beneath: body yellowish or citron-colour, covered with unequal, obliquely imbricated scales: lateral line strait: dorsal and anal fins citron-colour with a black streak on the hind-part, edged with white; and towards the tip of the anal fin a black ocellated spot: pectoral fins and tail glaucous, the former tinged with yellow at the base. Native of the Pacific ocean.

BODDAERTIAN CHÆTODON.

Chætodon Boddaerti. *C. fasciis fuscis et cærulescentibus, spinis pinnarum ventralium duabus. Lin. Syst. Nat. Gmel.* p. 1243.

Chætodon variegated with brown and blueish bands, and with two spines at the ventral fins.

A SPECIES hitherto but very little known: native of the Indian? seas.

SARGOID CHÆTODON.

Chætodon Sargoides. *C. luteus, capite fasciisque sex transversis violaceis.*

Gold-yellow Chætodon, with the head and six transverse bands violet-colour.

Le Chetodon Sargoide. *Cepede. 4. p. 473.*

Slightly described by Cepede from the drawings and manuscripts of Plumier. Allied, as it should seem by the title, to the Sparus Sargus in habit: general colour gold yellow; head and six transverse bands, together with the edges of the dorsal, anal, and caudal fin of a fine violet-colour: in the dorsal fin are thirteen spiny rays, and one in each pectoral fin: a depression before the eyes; the opening of the mouth small, and the upper lip thick: gill-covers rounded: Native of the American seas.

CANESCENT CHÆTODON.

Chætodon Canescens. *C. cauda bifida, spinis dorsalibus duabus, radio tertio longissimo, ore bidentato. Lin. Gmel. p.* 1240.

Greyish Chætodon, with bifid tail, two dorsal spines, the third ray very long, and bidentated snout.

Chætodon canesceus. *Seb. mus.* 3. *t.* 25. *f.* 7.

Shape resembling that of the *C. cornutus* and *bifasciatus*: colour greyish: scales very small: on each side the mouth a sort of spine or process: third ray of the dorsal fin extremely long, as in the two species just mentioned. Native of the American and Indian seas.

SCALELESS CHÆTODON.

Chætodon Alepidotus. *C. cauda bifida, spinis dorsalibus tribus, pinnis ventralibus nullis.* Lin. *Syst. Nat. Gmel. p.* 1240.

Chætodon with bifid tail, three dorsal spines, and no ventral fins.

Shape rhomboid: colour blueish above, whitish beneath: scales either none or so small as to be difficultly seen: teeth in a single row: lateral line parallel with the back: tail bifid: no ventral fins: dorsal and anal falcated: native of the American seas: observed by Dr. Garden.

SORDID CHÆTODON.

Chætodon Sordidus. *C. ex fusco cinereus, ovatus, fasciis transversis obsoletis quatuor.* Lin. *Gmel. p.* 1267. *Forsk. Arab. p.* 62.

Dusky-grey Chætodon with four obscure transverse bands.

Length about a span: body ovate: colour dull grey, with four paler transverse bands: scales large and membranaceous: native of the Arabian seas, frequenting the shores among corals, &c. observed by Forskal, who informs us that it is much esteemed as an edible fish.

LAMARK'S CHÆTODON.

Chætodon Lamarkii. *C. luteus, striis tribus longitudinalibus fuscis.*
Gold-yellow Chætodon, with three longitudinal dusky stripes.
Chætodon Lamarck. *Cepede. 4. p. 526.*

General colour gold-yellow, with three longitudinal dusky stripes on each side the body: lower jaw longer than the upper: scales rounded, striated, and denticulated: fifteen spiny rays and sixteen soft ones in the dorsal fin: three spiny and twenty soft ones in the anal: gill-covers armed with a very long spine. Described by Cepede from a specimen in the Prince of Orange's museum.

With two dorsal fins.

PLUMIER'S CHÆTODON.

Chætodon Plumieri. *C. subflavus, subtus subargenteus, corpore fasciis sex virentibus, pinna dorsali analique falcatis.*
Yellowish Chætodon, subargenteous beneath, with six greenish bands across the body, and dorsal and anal fin falcated.
Chætodon Plumieri. *Bloch. t. 211.*

Shape rhombic-ovate, in habit resembling the *angel, rhomboid,* and *ciliated* Chætodons. Colour dull yellow above, silvery beneath: across the body six greenish stripes: first spines of the back connected by a membrane, so as to form a small separate fin: second dorsal and caudal, large, long, and falcated, so as to extend beyond the tail, which is

of moderate size, and slightly lunated: gill-covers without spine. Native of the American seas, where it arrives at a considerable size.

CONSTRICTED CHÆTODON.

Chætodon Constrictus. *C. griseo-flavescens, nigro transversim fasciatus, corpore medio constricto.*
Yellowish-grey Chætodon, with transverse black bands and body constricted in the middle.
Chætodon constrictus. *New Holl. zool. p. 27. t. 6.*

Length about eight inches: shape of the body inclining to an oblong square, and remarkably contracting in diameter about the middle, so as to appear constricted in that part: scales of moderate size: colour yellowish grey, tinged on the back and part of the fins with blue: across the body eight black bands, that in the middle narrowest: on the back two very distinct fins, the rays of the first being all spiny: tail inclining, though very slightly, to a lunated form. Native of the Indian seas, and observed about the coasts of New Holland.

ARMED CHÆTODON.

Chætodon Armatus. *C. argenteus, fasciis septem transversis nigris, capite elongato, pinnis dorsalibus duabus.*

Silvery Chætodon, with seven transverse black bands, lengthened head, and two dorsal fins.

Chætodon albescens, corpore fasciis septem nigris, spinis pinnæ dorsalis sex, tertia longissima. *White journ. New South Wales, p.* 254. *pl.* 39. *Naturalist's Miscellany, vol.* 2. *pl.* 57.

Length of the specimen described about four inches: colour silvery white, darker and with a blueish tinge on the back: head of a somewhat lengthened form: across the body seven black bands: on the back two distinct dorsal fins, of which the first consists of very strong spiny rays, the third exceeding the rest in length; tail very slightly inclining to a lunated form at the extremity. Native of the Indian seas, and observed about the coast of New Holland.

Generic Character.

Dentes parvi, plerisque lobati.	*Teeth* small, in most species lobated.
Cauda utrinque aculeata.	*Tail* aculeated on each side.
Habitus generis præcedentis.	*Habit* or general appearance as in the preceding genus.

THE genus *Acanthurus* consists of such species of the Linnæan genus *Chætodon* as, in contradiction to the principal character of that genus, have, in general, moderately broad and strong teeth, rather than slender and setaceous ones: they are also furnished on each side the tail with a strong spine.

UNICORN ACANTHURUS.

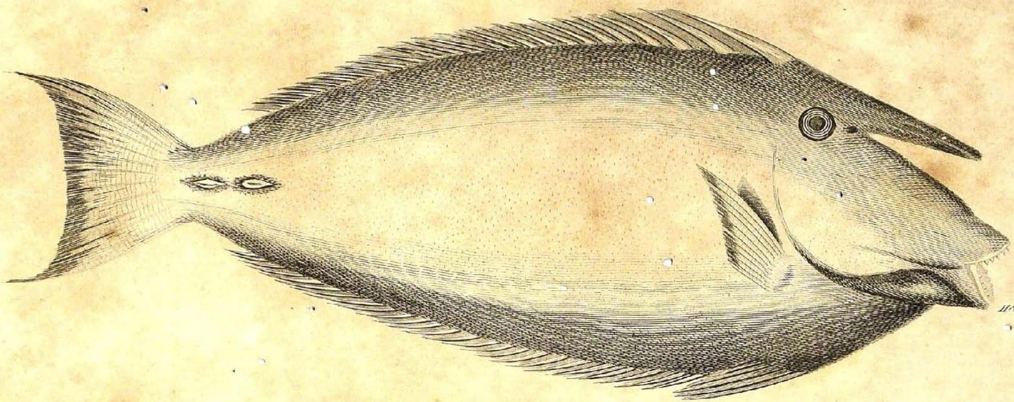
Acanthurus Unicornis. *A. griseo-fuscus, cornu frontali antrorsum porrecto, cauda utrinque biaculeata.*

Grey-brown Acanthurus, with a frontal horn stretching forwards over the snout, and two spines on each side the tail.

Monoceros minor. *Will. ichth. p.* 216. *t.* O. 4.

Le Nason Licornet. *Cepede.* 3. *p.* 103.

THIS and the following are by far the largest of the genus, growing to the length of three feet or



Heath sculp.

UNICORN ACANTHURUS.

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more: the present species is of the same general shape with the major part of the Chætodons, being of a moderately broad or deep form, tapering pretty suddenly at each extremity: from the front proceeds a strong, conical, horn-shaped process, extending forwards nearly as far as the tip of the snout, and terminating somewhat obtusely: the mouth is rather small, and the teeth moderately strong: the skin is somewhat rough, of a greyish brown colour, and destitute of apparent scales: the dorsal fin, which is rather shallow than broad, commences almost immediately behind the head, and is continued very nearly to the tail: at its origin are two or three very strong spines: the anal fin commences immediately beyond the breast, and like the dorsal, is continued nearly to the tail, which is moderately broad and of a lunated shape: on each side the tail are situated two strong, but short spines, rising from a very broad base: these, as well as the horn in front, are much less conspicuous in the young than in the more advanced specimens.

It is a native of the Indian and Arabian seas, in the latter of which it is generally seen in large shoals of two or four hundred each, swimming with great strength, and feeding principally on the different kinds of sea-weed. Forskal, in his Fauna Arabica, tells us he was assured by a fisherman that he saw an eagle (probably an Osprey) dart among a shoal of these fishes, which swim pretty close together, and happening to seize two at once in his claws, was, in consequence of their sudden

and violent separation in different directions, torn asunder in the conflict and destroyed.

This fish appears to have been first described by Grew in his Museum of the Royal Society, under the name of the *lesser unicorn fish;* he observes that the head, when viewed in profile, bears some resemblance to that of a baboon: the caudal spines seem to have been wanting in this specimen; otherwise it is scarcely to be imagined that so accurate an observer as Grew would have omitted to particularize them. Willughby repeats Grew's description, and his figure is evidently engraved from the same specimen. It is singular that so remarkable a fish should have been entirely overlooked by Linnæus, even in the twelfth edition of the Systema Naturæ. In the British and Leverian museums it occurs in fine preservation, and in the former are specimens in a young state, shewing the comparatively inconspicuous appearance both of the frontal process and caudal spines at that period of its growth.

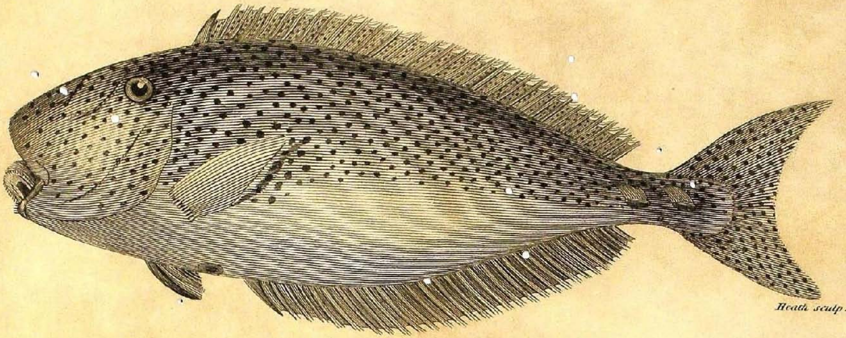
ROUND-FRONTED ACANTHURUS.

Acanthurus Nasus. *A. griseus, nigro irroratus, gibbere frontali rotundato, cauda utrinque biaculeata.*

Grey Acanthurus, freckled with black, with a rounded frontal tubercle and two spines on each side the tail.

Le Nason Loupe. *Cepede.* 3. *p.* 111.

In size this species equals, or even exceeds, the preceding: the body is of a more oblong shape,



Heath sculp.

ROUND-FRONTED ACANTHURUS.

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and is of a greyish colour, speckled on the upper parts, dorsal fin, and tail, with black: the head is rather large, and is formed in front into a rounded protuberance immediately above the mouth which is rather small and furnished in each jaw with a row of numerous small teeth: the dorsal fin commences at a small distance from the head, and is continued nearly to the tail: at its commencement is a strong spine, but the rest of the rays are soft: the anal fin is placed in an opposite situation beneath, and extends, like the former, almost to the tail, which is moderately broad, and lunated: on each side the base, at a small distance from the commencement of the finny part, are situated two very strong, slightly curved, sharp-pointed spines, in a reversed direction, or with the points towards the head, as in most others of the present genus. This species is a native of the Indian seas, and according to Cepede, was first described by Commerson.

BLUE ACANTHURUS.

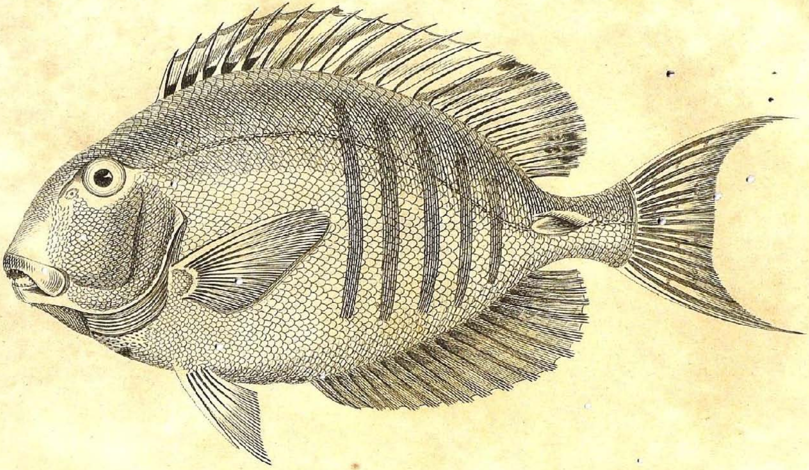
Acanthurus Teuthis. *A. cæruleus, corpore medio pallidiore, cauda utrinque aculeata.*
Blue Acanthurus, with the middle of the body paler, and a spine on each side the tail.
Chætodon cærulescens, &c. *Seb.* 3. *t.* 33. *f.* 3.
Teuthis Hepatus. *Lin. Syst. Nat. p.* 507.

Linnæus, in the twelfth edition of the Systema Naturæ, thought it necessary to arrange this fish under a distinct genus among the *pisces abdominales*, under the name of *Teuthis*. It is however a genuine

Acanthurus, and the genus Teuthis is, in consequence, annulled. The blue Acanthurus is a native of the Indian and American seas, and is said to arrive at the length of ten or twelve inches, or even more, though the specimens usually seen are considerably smaller: in shape it resembles the major part of the Chætodons, the head sloping in front from the origin of the dorsal fin: the colour, in the recent fish, is a deep or blackish blue, which in specimens preserved in spirits of wine, usually fades into a ferruginous brown: on each side the body is a very large, oblong-ovate whitish patch or spot, surrounded by a border of a deeper cast: the skin is roughened by very small scales: the tail is slightly lunated, dusky on the upper and lower part, and marked towards the base by a whitish ovate spot: the teeth are crenated, and on each side the base of the tail, is a very strong spine, which, as in most others of the present genus, is erigible at the pleasure of the animal, in an horizontal direction, from the channel in which it lies.

The fish figured by Catesby in his Natural History of Carolina, under the name of the *Tang**, is generally considered as representing the present species: yet, if Catesby's description be accurate, the Tang is destitute of teeth; and, from the figure accompanying the description, appears to want the ventral fins, is covered with middle-sized scales, and is entirely of a deep blue colour without any variegation. As Catesby however was not remark-

* Turdus rhomboidalis. *Catesb. Car.* 2. *t.* 10.



Heath sculp.

LANCET ACANTHURUS.

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able for minute accuracy either in his descriptions or figures, it is probable that it may have been intended for the present species. Catesby informs us that it grows to the length of a foot and half, and is in request as an edible fish.

LANCET ACANTHURUS.

Acanthurus Chirurgus. *A. luteus, corpore postice striis transversis fuscis, cauda utrinque aculeata.*

Orange-yellow Acanthurus, with the body crossed on the hind-part by transverse brown stripes, and a spine on each side the tail.

Chætodon Chirurgus. *Bloch. t.* 208.

Length about nine or ten inches: shape ovate: colour orange-yellow: scales rather small: on each side the hind part of the body five or six narrow, transverse, dusky stripes: gill-covers smooth or unarmed: on each side the base of the tail a very strong, curved spine, erigible at pleasure from the furrow in which it lies: tail lunated: dorsal fin pale violet, without scales at the base, and marked by several oblique, narrow, dusky streaks: pectoral and ventral fins tinged with crimson towards the base: native of the American seas, where it is generally known by the name of the Surgeon or Lancet-Fish, a title however which seems not entirely confined to the present species.

BLACKISH ACANTHURUS.

Acanthurus Nigricans. *A. nigricans, subtus subargenteus, cauda utrinque aculeata.*

Blackish Acanthurus, subargenteous beneath, with a spine on each side the tail.

Chætodon nigricans. *Lin.* *Bloch. t.* 203.

Of nearly the same size with the preceding, but with the front sloping more suddenly downwards from the origin of the dorsal fin: colour dusky, or blackish brown, with the under parts inclining to a subargenteous cast: scales rather small: dorsal and anal fin scaled at the base: gill-covers unarmed: on each side the tail a strong and sharp spine, as in the former species: tail nearly entire, or but slightly lunated: teeth broad and crenulated or lobed on the edges: native of the Indian, American, and Arabian seas, and said to grow to the length of two feet, and to be esteemed for the table.

MILITARY ACANTHURUS.

Acanthurus Militaris. *A. corpore rhombeo-ovato fusco, cauda utrinque aculeata.*

Brown Acanthurus, with rhombic-ovate body, and strong spine on each side the tail.

Length about five inches: shape rhombic-ovate: head sloping suddenly downwards: colour brown: scales extremely small: teeth denticulated or cre-

nated: a strong spine at the base of the pectoral fins. Tail slightly lunated: spine on each side very strong and sharp: native of the Indian and American seas: in the British and Leverian Museums.

TRIRADIATED ACANTHURUS.

Acanthurus Triostegus. *A. fusco-virescens, fasciis quatuor transversis fuscis, cauda utrinque aculeata.*

Greenish-brown Acanthurus, with four transverse dusky bands, and a spine on each side the tail.

Chætodon triostegus. *Lin.* Chætodon, &c. *Seb.* 3. *t.* 25. *f.* 4.

LENGTH about four inches: shape rhombic-ovate: head suddenly sloping: general colour pale greenish brown, marked with four narrow transverse brown stripes or bands: scales very small: gill-covers unarmed: gill-membrane three-rayed: in the throat three small rough bones: teeth crenated: tail lunated: spine on each side very strong. Native of the Indian seas.

GUARDED ACANTHURUS.

Acanthurus Harpurus. *A. corpore rhombeo-ovato fusco, squamis minutissimis, cauda utrinque biaculeata.*

Rhombic-ovate, brown Acanthurus, with extremely minute scales, and two spines on each side the tail.

SHAPE rhombic-ovate: length about six inches: colour dusky brown, without any variegation:

scales most extremely small, so as to be scarce visible: gill-covers unarmed: teeth crenated: tail lunated, and furnished on each side the base with two very strong spines. Native of the Indian seas. In the British Museum.

VIOLET-STRIPED ACANTHURUS.

Acanthurus Sohal. *A. fuscus striis longitudinalibus violaceis, cauda utrinque aculeis duobus in fossula rubra.*

Dusky Acanthurus, with longitudinal violet streaks, and two spines on each side the tail imbedded in a red depression.

Chætodon Sohal. *Forsk. Arab. p. 63.*

Length about three spans: shape ovate: colour dusky, with longitudinal violet streaks: abdomen whitish: fins violet-coloured: pectoral fins marked by a yellow spot: teeth crenated: tail lunated: on each side the base a long, red carina, imbedded in a depression of the same colour, at each * extremity of which is a strong spine. Native of the Red sea: not esteemed as an edible fish.

* Spina pone et ante hanc carinam. *Forsk. arab. p. 64.*

DUSKY ACANTHURUS.

Acanthurus Nigro-fuscus. *A. nigro-fuscus, corpore ovato, cauda utrinque aculeata.*

Dusky Acanthurus, with ovate body, and spine on each side the tail.

Acanthurus nigro-fuscus. *Forsk. Arab. p.* 64.

Much allied, according to Forskal, to the *A. Sohal*, but differs in being entirely of a blackish-brown colour, as well as in having the lobes of the tail much shorter, and a single spine on each side.

A variety of the above, entirely of a black colour, is mentioned by Forskal, under the title of *Gahm*. Both are natives of the Red sea.

ACHILLEAN ACANTHURUS.

Acanthurus Achilles. *A. corpore ovato fusco, posterius macula ovata nuda rubra, medio aculeata.*

Brown, ovate Acanthurus, with a bare ovate red spot on the hind-part, aculeated in the middle.

Length about five or six inches: shape ovate: colour brown: scales small: gill-covers unarmed: teeth broad and crenated: on each side the hind-part of the body or base of the tail a large, ovate, bare, red patch or spot, in the middle of which is a strong spine imbedded in a furrow: tail lunated and tipped by three concentric crescents, the first of which is white, the next black, and the third ferruginous, edged with ash-colour. An elegant

specimen of this fish occurs in the Leverian Museum. In some particulars it seems allied to the *A. Sohal*, but, if Forskal's description of that fish be accurate, must be a very distinct species.

LINEATED ACANTHURUS.

Acanthurus Lineatus. *A. ovatus fuscus, lineis numerosis longitudinalibus albis, cauda utrinque aculeata.*
Ovate brown Acanthurus, with numerous longitudinal white stripes, and spine on each side the tail.
Chætodon lineatus. *Lin.*

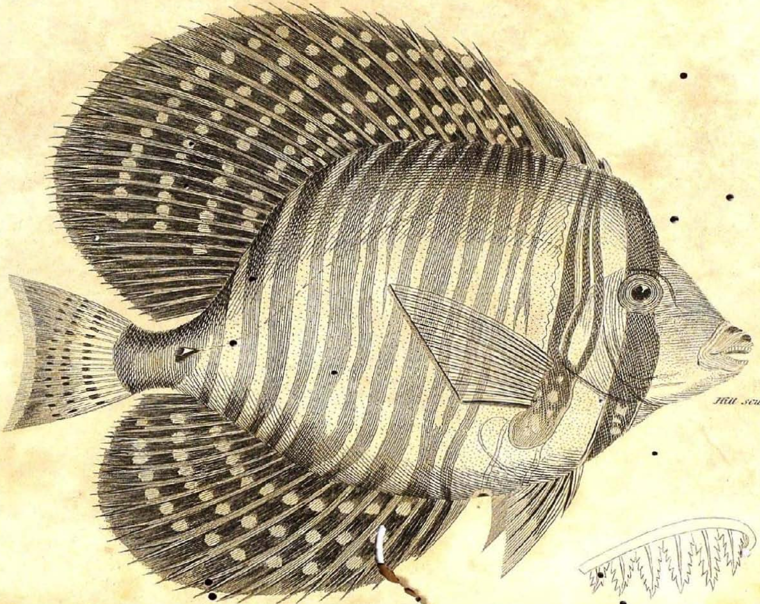
Length about six inches: shape ovate: colour brown, marked by pretty numerous, longitudinal, narrow, white stripes, running from head to tail: each stripe edged with a darker colour than that of the ground: scales small: gill-covers unarmed: teeth crenated: tail lunated: tail-spines very strong, of moderate length, and sharp-pointed. Native of the Indian and American seas: in the Leverian Museum.

UMBRE ACANTHURUS.

Acanthurus Umbratus. *A. corpore ovato fusco, squamis minutissimis, cauda utrinque aculeata.*
Brown ovate Acanthurus, with extremely minute scales, and a spine on each side the tail.

Length about four inches: shape ovate: colour brown: scales extremely minute: gill-covers un-

BROAD-FINNED ACANTHURUS.



Hill sculp.

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armed: tail slightly lunated: tail spines very sharp and strong. Native of the Indian seas. In the British Museum.

SPECKLED ACANTHURUS.

Acanthurus Meleagris. *A. fusco-nigricans, maculis creberrimis rotundis albis, cauda utrinque aculeata.*

Blackish-brown Acanthurus, thickly marked with round white spots, and spine on each side the tail.

LENGTH about four inches: shape roundish-ovate: colour deep brown, thickly marked on all parts with small, round, white spots: teeth crenated: gill-covers unarmed: scales extremely small: tail lunated: spines moderately strong. Native of the Indian and American seas. In the British Museum.

BROAD-FINNED ACANTHURUS.

Acanthurus Velifer. *A. corpore rotundato-ovato albido, fasciis plurimis transversis fuscis, cauda utrinque aculeata.*

Whitish Acanthurus, with roundish-ovate body, marked by numerous brown transverse bands, and spine on each side the tail.

Acanthurus Velifer. *Bloch. t.* 427. *f.* 1.

LENGTH about four inches and a half: body roundish-ovate: ground-colour whitish, with pretty numerous narrow transverse stripes of yellowish-brown: across the head a broader black stripe, passing through the eyes: teeth crenated, and

pointed at the tips: dorsal and anal fin very broad, and thickly marked with round blue spots: tail slightly lunated, and furnished on each side the base with a spine. Native of the American seas.

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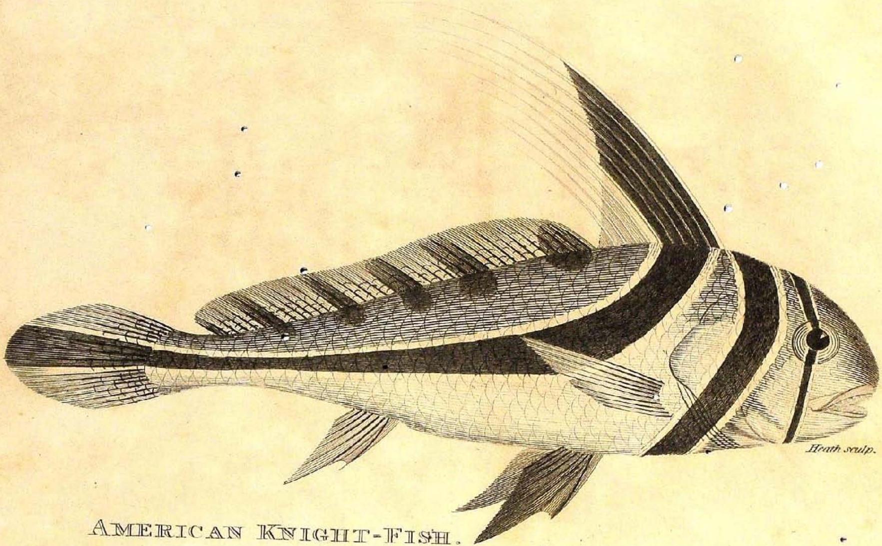

Heath sculp.

AMERICAN KNIGHT-FISH.

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EQUES. KNIGHT-FISH.

Generic Character.

Dentium ordines plurimi.	*Teeth* in several rows.
Corpus fasciatum.	*Body* banded.

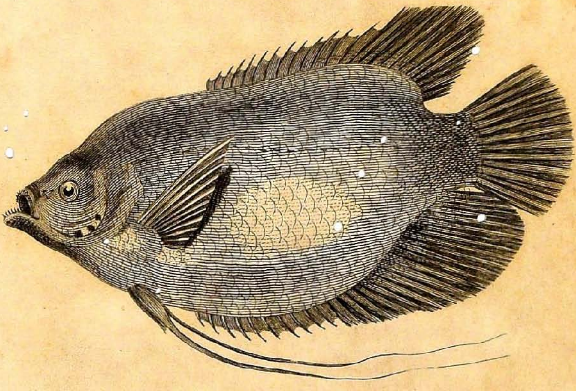
AMERICAN KNIGHT-FISH.

Eques corpore oblongo flavescente, fasciis tribus nigris, oculari, pectorali, longitudinalique.

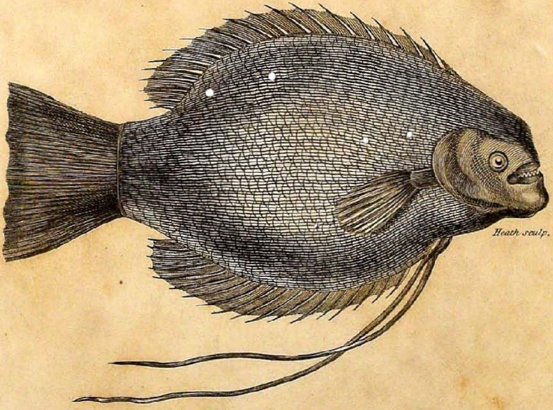
Yellowish oblong-bodied Knight-Fish, with three black bands, the first across the eyes, the second across the thorax, and the third along the body.

Chætodon lanceolatus. *Lin.* Eques Americanus. *Bloch. t.* 347.

THIS fish, which by Linnæus was associated with the Chætodons, has been formed into a distinct genus by Dr. Bloch on account of its teeth, which, instead of being arranged in a single row, as in those animals, are disposed into several concentric ranges. It is a native of the American seas, and is found of the length of near twelve inches.



GORAMY TRICHOPUS.



Heath sculp.

SATYR TRICHOPUS.

1803. July 1. London Published by G. Kearsley. Fleet Street.

TRICHOPUS. TRICHOPUS.

Generic Character.

Corpus compressum.	*Body* compressed.
Pinnæ ventrales filamento longissimo.	*Ventral fins* with an extremely long filament.

THE fishes belonging to this new genus are described by Cepede from the manuscripts and drawings of Commerson. Cepede however, very unnecessarily, divides them into two distinct genera, to one of which he assigns the title of *Osphronemus* (Osphroneme), and to the other of *Tricopodus* (Trichopode). These fishes are natives of the Indian seas or rivers, and are distinguished, except in one species, by the remarkable length of one ray of the ventral fins, which extends the whole length of the body, or even beyond it.

GORAMY TRICHOPUS.

Trichopus Goramy. *T. subargenteo-rufescens, radio secundo pinnarum ventralium longissimo.*

Rufescent Trichopus, with a silvery cast on the sides, and the second ray of the ventral fins extremely long.

Osphronemus Goramy. *Cepede.* 3. *p.* 116.

NATIVE of the fresh waters of China: length two metres: depth very great in proportion: body much compressed, and covered with large scales,

the hind part of the back, and the lower part of the abdomen sharpening into a carina: the bases of the dorsal and anal fin are also scaly, as in the genus Chætodon: mouth somewhat extensile, each jaw being furnished with a double row of teeth, those of the outer row short and slightly curved, those of the inner row smaller and more closely set: in the palate is a callous protuberance: the tongue is situated deep in the fauces, and in the inside of the mouth, above the gills, is a kind of ethmoid bone, the use of which does not appear to be well ascertained: the dorsal fin is of moderate width, and reaches from the back of the head almost to the tail, near which it is very much rounded: the vent is situated towards the fore-part of the body, and the anal fin reaches from it in the manner of the dorsal, but is much wider: the pectoral fins are of moderate size: the ventral consist each of about six rays, of which the first is strong and sharp, and the second terminated by an extremely long filament, reaching as far as the end of the tail which is of a rounded shape: the lateral line is strait, and seated somewhat nearer the back than the abdomen: the colour of this species is reddish brown, somewhat paler on the under parts: the sides are tinged with a silvery hue, and the scales are bordered with brown: it is greatly esteemed in China as an article of food, and is known by the name of *Goramy*: it is a prolific species, and is easily introduced into new situations; having been imported into Java and many other of the eastern islands.

ARABIAN TRICHOPUS.

Trichopus Arabicus. *T. virescens violaceo cæruleoque striatus, pinnarum ventralium radio secundo longissimo.*

Greenish Trichopus, with violet and blue stripes, and second ray of the ventral fins extremely long.

Osphroneme Gal. *Cepede. 3. p. 122.*

Labrus Gallus. *Lin. Syst. Nat. Gmel.*

Scarus Gallus. *Forsk. arab.*

Observed by Forskal in the Arabian seas, and referred by him to the genus *Scarus*: considered by the Arabians as a poisonous fish, owing, probably, to its feeding on some noxious kinds of Mollusca, and sea-insects: size not particularized: colour dull green, with violet stripes: on the abdomen two blue stripes, with a green one in the middle: scales lax, membranaceous at the edges, striated, and marked by a transverse purple stripe: teeth in a single row, those in front larger than the rest, and standing separate from each other: lateral line slightly branched: pectoral fins ovate violet-blue: ventral blue, with the second ray extremely long: dorsal and anal greenish, edged with blue: tail yellow in the middle, violet-coloured on the sides, and bordered with blue.

SATYR TRICHOPUS.

Trichopus Satyrus. *T. fronte descendente, mento prominente, pinnis ventralibus uniradiatis longissimis.*

Trichopus with sinking forehead, projecting chin, and extremely long, single-rayed ventral fins.

Trichopode Mentonier. *Cepede. 3. p. 126.*

Described by Cepede from the manuscripts of Commerson: size not particularized: body very deep, much compressed, and covered with moderately large scales: dorsal and anal fin widish, like those of the first species; pectoral short, large, and rounded: ventral consisting each of a single filament, thickish at the base, and gradually lessening in its progress, reaching beyond the tail: head of an extremely singular aspect, being so formed as to bear a rude general resemblance to the human face, or rather to that of a monkey, the chin projecting, the forehead somewhat sinking in, and the gill-covers on each side representing the cheeks: colour and size not mentioned: native of the Indian seas. This fish, like the first species, is known in some countries by the name of *Goramy* or *Gouramy*.

PALLASIAN TRICHOPUS.

Trichopus Pallasii. *T. fuscus albido-undulatus, corpore caudaque macula utrinque nigra, pinnis ventralibus uniradiatis longis.*

Brown Trichopus, with pale undulations, a black spot on each side the body and tail, and long single-rayed ventral fins.

Labrus pinnis ventralibus uniradiatis. *Lin. Syst. Nat. Gmel. p.* 1286. *Pall. spic. zool.* 8. *p.* 45.

Sparus, &c. *Kolreuter nov. comm. petrop.* 9. *p.* 452. *t.* 10. *f.* 1.

Described by Dr. Pallas as a species of *Labrus*, and by Kolreuter, in the Petersburgh Transactions, as a *Sparus*: length about four inches: head rather small, and covered with scales; mouth small, ascending; jaws extensile, and rough on the edges: colour brownish, with paler undulations, each side of the body and tail being marked with a black ocellate spot: lateral line somewhat broken or interrupted towards the tail: pectoral fins thin and pale: the rest brown: anal and caudal roundish-bilobate, and spotted with white: ventral consisting each of a long single ray: native of the Indian seas.

MONODACTYLE TRICHOPUS.

Trichopus Monodactylus. *T. argenteus, dorso subfusco, pinnis ventralibus uniradiatis, rigidis, brevibus.*

Silvery Trichopus, with brownish back, and short, single-rayed, rigid ventral fins.

Monodactyle Falciforme. *Cepede.* 3. *p.* 132.

Described by Cepede in a distinct genus, under the name of *Monodactylus*. Differs from the rest

in having two short spines only, by way of ventral fins: is a small fish; measuring only about twenty-six centimetres in length: body much compressed, and covered with small, rounded, smooth scales; as are also the bases of the dorsal and anal fin: colour silvery, tinged with brown on the upper parts: eyes large: mouth semicircular: teeth short, sharp, and close-set: dorsal and anal fin of nearly equal size and of a somewhat falciform shape, extending nearly to the tail, which is crescent-shaped: lateral line curved in the direction of the back, and placed pretty near to it: vent almost immediately behind the pectoral fins, which are of a pointed shape: gill-covers composed of two laminæ, of which the hindmost is irregularly scolloped on the edges: native of the Indian seas: described from the manuscripts of Commerson.

SCARUS. SCARUS.

Generic Character.

Maxillæ osseæ, medio divisæ, margine crenatæ, dentibus connato-glomeratis.	*Jaws* bony, divided in the middle, crenated on the edge; the teeth connate and conglomerate.

CRETAN SCARUS.

Scarus Cretensis. *S. viridis, subtus flavescens, squamis permagnis, linea laterali ramosa, cauda sublunata.*

Green Scarus, yellowish beneath, with very large scales, ramified lateral line, and sublunated tail.

Scarus Cretensis. *Bloch. t.* 220.

GENERAL length about twelve inches: body broad, sloping, scales extremely large, lateral line ramified on every scale over which it passes. Native of the Mediterranean, and particularly about the coasts of Crete, but is also found in the Indian seas.

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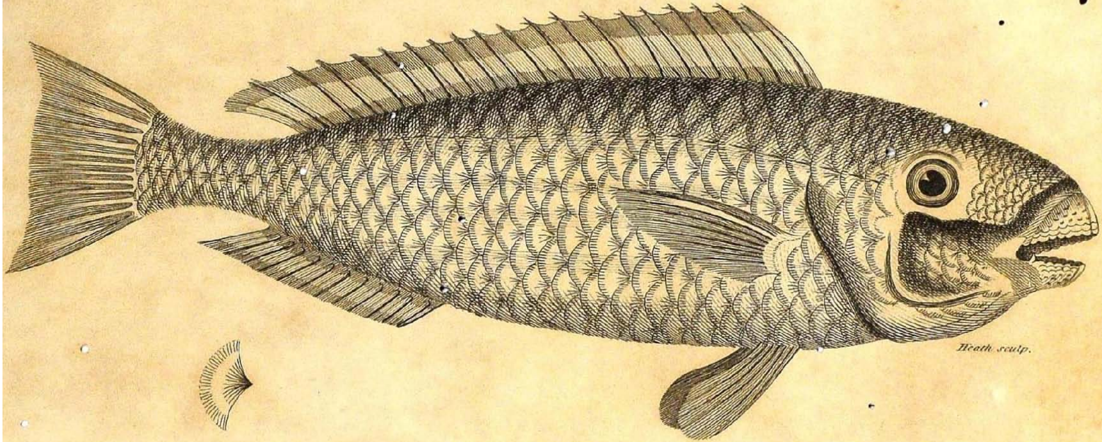

Heath sculp.

GREEN SCARUS.

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GREEN SCARUS.

Scarus Viridis. *S. viridi-flavescens, squamis magnis viridi marginatis, linea laterali versus caudam interrupta.*

Yellowish-green Scarus, with large scales edged with green, and lateral line interrupted towards the tail.

Scarus viridis. *Bloch. t.* 222.

Length ten or twelve inches: head strait: scales large, and each bordered with a deeper green than the ground-colour: tail slightly sublunated. Native of the Japanese seas.

RIVULATED SCARUS.

Scarus Rivulatus. *S. cærulescens nigro-maculatus, rivulis longitudinalibus flavis.*

Blueish Scarus, spotted with black, and marked by longitudinal yellow undulations.

Scarus rivulatus. *Forsk. arab. p.* 25.

Native of the Red sea: observed by Forskal: said to arrive at a great size: scales very small: dorsal and anal fin occasionally recumbent in a channel: tail forked: supposed to feed principally on the different kinds of fuci, and considered as an edible fish; but said to be sometimes productive of disagreeable symptoms from the wounds inflicted by the sharp rays of its dorsal fin.

STELLATED SCARUS.

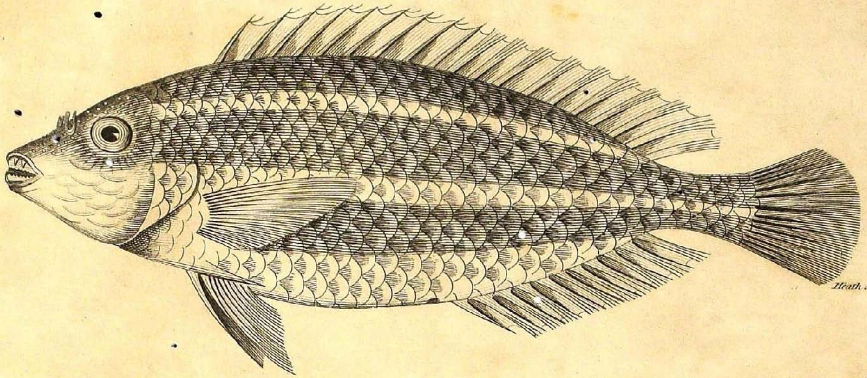
Scarus Stellatus. *S. ovalis nigricans, annulis subhexagonis pallidis variatus.*
Oval blackish Scarus, variegated with subhexagonal pale rings.
Scarus stellatus. *Forsk. arab. p.* 26.

LENGTH about half a foot: colour dusky or blackish, variegated on all parts by small, contiguous, pale, subhexagonal rings: native of the Arabian seas: observed by Forskal: an edible species.

RED SCARUS.

Scarus Croicensis. *S. roseus, abdomine argenteo.*
Rose-red Scarus, with silvery abdomen.
Scarus Croicensis. *Bloch. t.* 221.

LENGTH about ten inches: shape like that of a Carp: colour strong rose-red, with silvery abdomen; and in some specimens two longitudinal silvery stripes on the body: scales large: fins pale: tail slightly lunated. Native of the Indian seas.



RED SCARUS.

1803 July 1 London, Publish'd by G. Kearsley, Fleet Street.

PARROT SCARUS.

Scarus Psittacus. *S. virescens, lineis flavicantibus, pinnarum margine, vitta abdominali, characteribusque capitis cæruleis. Forsk. arab. p. 29.*

Greenish Scarus, marked with yellowish lines, and with the edges of the fins, abdominal band, and variegations of the head blue.

Scarus Psittacus. *Forsk. arab. p. 29.*

Jaws blue: fins purple, edged with blue: back straiter in its outline than the abdomen: tail rising, spotted with blue, and subfurcated: lateral line double and ramified: eyes small. Native of the Arabian seas.

PURPLED SCARUS.

Scarus Purpuratus. *S. obscure viridis, vittis utrinque tribus purpureis longitudinalibus serratis, ventre cæruleo.*

Dull-green Scarus, with three longitudinal serrated purple bands on each side, and blue abdomen.

Scarus purpureus. *Forsk. arab. p. 27.*

An elegant species; in habit allied to the *Labri*: body abruptly lanceolate; the purple stripes on the body serrated at their upper edges: pectoral fins green, and marked at the tip by a large, lunated, marginal, black spot: dorsal and anal marked towards the base by a purple stripe: ventral fins blue: tail marked with longitudinal purple spots, and on each side by a purple stripe: shape slightly rounded: lateral line ramified: scales lax, as in the Mullet. Native of the Arabian seas: observed by Forskal.

BLACK SCARUS.

Scarus Niger. *S. ovato-oblongus, nigro-fuscus, labiis rubris, pinnarum marginibus viridi-cæruleis.*
Ovate-oblong, blackish-brown Scarus, with red lips, and the margins of the fins greenish-blue.
Scarus niger. *Forsk. arab. p.* 28.

Native of the Arabian seas: lateral line double and ramified: tail greenish, and obtusely forked.

SCHLOSSERIAN SCARUS.

Scarus Schlosseri. *S. aureus, maculis utrinque quinque fuscis, dorso fuscescente, cauda subæquali. Lin. Syst. Nat. Gmel. p.* 1282. *Pall. spic. zool.* 8. *p.* 41.
Gold-coloured Scarus, with five dusky spots on each side, brownish back, and nearly even tail.

Size of a roach: body compressed and broad: scales large: eyes large: irides fulvous: lower mandible rather longer than the upper: ventral fins triangular, and connected to the abdomen by the intervention of a perpendicular membrane. Native of Java.

BLUE-STRIPED SCARUS.

Scarus Ghobban. *S. albidus, squamis transversim subcæruleo fasciatis, linea laterali duplici.*
Whitish Scarus, with the scales marked by transverse blueish bands, and double lateral line.
Scarus Ghobban. *Forsk. arab. p.* 28.

Shape ovate: head marked by greenish-blue streaks: fins edged with a similar colour: tail entire: lateral line ramified. Native of the Arabian seas: observed by Forskal.

FERRUGINOUS SCARUS.

Scarus Ferrugineus. *S. fusco-ferrugineus, maxillis marginibusque pinnarum viridibus, cauda æquali.*
Brown-ferruginous Scarus, with the jaws and margins of the fins green, and even tail.
Scarus ferrugineus. *Forsk. p.* 29.

Shape ovate-oblong: jaws green: body ferruginous-brown: pectoral fins of the same colour: ventral and anal violet: dorsal and tail yellowish: at the base of the tail several long lanceolate scales: tail itself broad and rounded. Native of the Arabian seas.

SORDID SCARUS.

Scarus Sordidus. *S. fusco-ferrugineus elongatus, pinnis obscurioribus, cauda surgente æquali.*

Brown-ferruginous Scarus, with darker coloured fins, and rising, even tail.

Scarus sordidus. *Forsk. arab. p. 30.*

SHAPE slender: colour brown: dorsal fin of a deeper colour: pectoral fins and tail yellowish: ventral violet: lateral line double and ramified: native of the Arabian seas.

SCALY-TAILED SCARUS.

Scarus Harid. *S. squamis magnis, abdomine violaceo, cauda furcata, media basi squamosa.*

Scarus Harid. *Forsk. arab. p. 30.*

NATIVE of the Arabian seas: lateral line double, strait, ramified: dorsal, anal, and caudal fin violet-coloured: pectoral fins yellowish.

TRILOBATE SCARUS.

Scarus Trilobatus. *S. varius, cauda triloba.*

Variegated Scarus, with trilobate tail.

Le Scare trilobé. *Cepede. 4. p. 21.*

SLIGHTLY described by Cepede from the drawings and MSS. of Plumier: its principal character seems to be its very distinctly trilobate tail: the upper

jaw is longer than the lower: colours of the body various: two spiny rays and sixteen soft on the dorsal fin. Native of the American seas: size not particularized.

ROSTRATED SCARUS.

Scarus Rostratus. *S. maxillis productis.*
Scarus with elongated jaws.
L'Ostorhinque Fleurieu. *Cepede. 4. p. 24.*

Slightly described by Cepede from the MSS. of Commerson: differs, according to Cepede, from the Scari in no other respect except in having the jaws much elongated: the lower jaw is rather longer than the upper: the eyes large: the head without scales: the dorsal and anal fin rather short: the tail very large, lunated: and near it is a transverse band of a deep colour: no lateral line could be perceived: on the dorsal fin are eight spiny rays. No particular description is given either of the size or colour of this fish, which Cepede names *Fleurieu* in honour of Monsr. Fleurieu, of the national institute, well known by his hydrographical and other publications.

SPARUS. SPARUS.

Generic Character.

Dentes validi: *Primores* in aliis ordine simplici, in aliis, duplici, triplici, vel quadruplici dispositi.

Molares (plerisque) validi, convexi, læves, in series dispositi, et quasi pavimentum in ore efformantes.

Labia crassa: *Opercula* mutica, squamosa.

Teeth strong: *front-teeth*, in some species disposed in a single row, in others in a double, treble, or quadruple row.

Grinders (in most species) convex, smooth, and disposed in ranges, forming a kind of pavement in the mouth.

Lips thick: *Gill-covers* unarmed, smooth, scaly.

THE genus *Sparus* is extremely numerous, and as the greater number are exotic, very little is known of their history: a general survey is therefore all that can be expected: it may be observed that they are much allied to the *Labri*, and that the distinction between these two genera is not, in all cases, so clear as might be wished: in the Systema Naturæ of Linnæus an evident confusion takes place with respect to the characters of both.

With forked tail.

GILTHEAD SPARUS.

Sparus Aurata. *S. argenteo-cærulescens, superciliis auratis, macula utrinque pone caput purpurea.*

Silvery-blueish Sparus, with gold-coloured brows, and a purple spot beyond each side the head.

Sparus Aurata. *Lin. Bloch. t.* 266.

General length about fifteen inches, but occasionally found of far larger size: body broad and thin, the back rising into a carina: colour as expressed in the specific character, but sometimes with the addition of several brownish longitudinal stripes: native of the Mediterranean, Atlantic, and Indian seas, and held in considerable esteem as a food: much admired by the ancient Greeks and Romans, and by the former nation consecrated to Venus.

SARGY SPARUS.

Sparus Sargus. *S. subargenteus flavo longitudinaliter striatus subnigro transversim fasciatus, macula ad basin caudæ nigra.*

Subargenteous Sparus, with yellow longitudinal streaks, blackish transverse bands, and black spot at the base of the tail.

Sparus Sargus. *Lin. Bloch. t.* 264.

Size nearly that of the Gilthead: shape not dissimilar, but deeper in proportion: native of the Mediterranean: esteemed as a food.

RAJAN SPARUS.

Sparus Raii. *S. subargenteo-cærulescens, dorso subfusco, capite truncato-declivi.*

Silvery-blueish Sparus, with dusky back, and abruptly-sloping head.

Sparus Raii. *Bloch. t.* 273.

Size that of the Gilthead: shape very broad, the head sloping abruptly downwards, nearly as in the Coryphenes: eyes large: all the fins scaly at the base: pectoral fins long and sharp: native of the Mediterranean.

LUTIAN SPARUS.

Sparus Lutianus. *S. griseo-argenteus, corpore supra lineam lateralem fasciis transversis cæruleis, infra lineis longitudinalibus flavis.*

Silvery-grey Sparus, marked above the lateral line with transverse blue streaks, and below it with longitudinal yellow lines.

Lutianus Lutianus. *Bloch. t.* 244.

Size and habit of a Gilthead: scales large: colour silvery grey, with pretty numerous deep yellow lines longitudinally disposed on the upper parts of the body, following the curve of the back: abdomen plain: fins yellow: native of the American seas.

RED-TAILED SPARUS.

Sparus Erythrourus. *S. argenteus, dorso subcæruleo, pinnis et præsertim cauda rubris.*

Silvery Sparus, with blueish black, and red fins, particularly the tail.

Sparus erythrourus. *Bloch. t.* 261.

Size and habit of the Gilthead: colours as mentioned in the specific character: eyes red: native of Japan.

BREAM SPARUS.

Sparus Brama. *S. argenteus, dorso subfusco, pinnis roseis, squamis supra lineam lateralem parvis.*

Silvery Sparus, with brownish back, rose-coloured fins, and scales small above the lateral line.

Sparus Brama. *Lin. Bloch. t.* 269.

Habit of the Gilthead: native of the Mediterranean and Atlantic: in considerable esteem as a food: grows to the length of about twelve inches.

MENDOLE SPARUS.

Sparus Mæna. *S. griseo-argenteus, pinnis roseis, macula utrinque laterali fusca.*
Silvery-grey Sparus, with rose-coloured fins, and dusky spot on each side.
Sparus Mæna. *Lin. Bloch. t.* 270.

Habit of the Bream Sparus, but of a less deep shape: length about ten inches: scales large: eyes red. Native of the Mediterranean sea, where it is a very common fish, but not much esteemed as a food.

ANNULAR SPARUS.

Sparus Annularis. *S. subargenteo-flavescens, dorso olivaceo fasciis quinque semidecurrentibus subnigris, cauda rubra apice nigra.*
Subargenteo-flavescent Sparus, with olivaceous back crossed by five semi-decurrent blackish bands, and red tail tipped with black.
Sparus Annularis. *Bloch. t.* 271.

Habit of the Mendole. Size the same: colour resembling that of the common Perch: at a certain distance from the base of the tail a round black spot, situated at the bottom of the last dusky bar of the body: pectoral fins and tail red, the rest blackish: native of the Mediterranean: not much esteemed for the table.

GREAT-EYED SPARUS.

Sparus Macropthalmus. *S. flavescens, roseo longitudinaliter striatus, oculis magnis, dentibus caninis quatuor in maxilla superiore.*

Yellowish Sparus, with rose-coloured longitudinal streaks, large eyes, and four canine teeth in the upper jaw.

Sparus macropthalmus. *Bloch. t.* 292.

Habit of the Gilthead: size that of a Perch: scales large and very finely ciliated at the edges: eyes very large, with red irides: native of the Indian seas?

ROSE SPARUS.

Sparus Erythrinus. *Sp. roseus, abdomine argenteo.*

Rose-red Spare, with silvery abdomen.

Sparus Erythrinus. *Bloch. t.* 274.

Size and shape of a Perch: colour most beautiful rose-red, deepest towards the back: abdomen silvery: scales of moderate size: dorsal fin paler than the body, but edged with deep rose. Native of the Mediterranean: found also in the Indian seas, where it is said to acquire noxious qualities.

PAGRE SPARUS.

Sparus Pagrus. *S. roseus, maculis duabus nigris utrinque ad opercula.*

Rose-red Sparus, with two black spots on each side near the gill-covers.

Sparus Pagrus. *Lin. Bloch. t.* 267.

Habit of Sparus Aurata, but of a somewhat longer shape: size that of a Carp: colour beautiful rose-red, with numerous longitudinal streaks of a deeper red: abdomen silvery, slightly marked by yellowish longitudinal streaks: eyes large and silvery. Native of the Mediterranean.

ROUGH SPARUS.

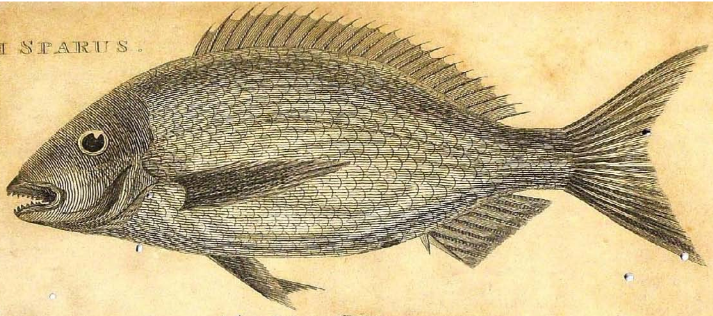
Sparus Dentex. *S. subargenteo-flavescens, dorso rubro-fusco, capite virente, dentibus acutis parvis, caninis quatuor.*

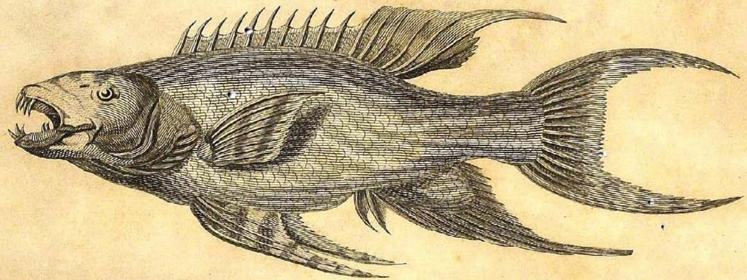
Subargenteo-flavescent Sparus, with reddish-brown back, green head, sharp, smallish teeth, with four large canine in each jaw.

Sparus Dentex. *Lin. Bloch. t.* 268.

General size and shape of a Carp: varies much in colour, being said to grow purple when old, and sometimes white; it is also occasionally spotted and streaked with black: lateral line pretty strongly marked, and curving in the direction of the back: scales middle-sized: tail scaly at the base, and but slightly forked. Native of the Mediterranean, where it arrives at a considerable size, and is a very strong and voracious fish.

BROWNISH SPARUS.





Hill sculp.

FALCATED SPARUS.

1803, July 1 London. Publish'd by G. Kearsley. Fleet Street.

FALCATED SPARUS.

Sparus Falcatus. *S. flavus, pinnis virentibus, dorsali analique subfalcatis.*

Yellow Sparus, with greenish fins, the dorsal and anal fin subfalcated.

Sparus tetracanthus. *Bloch. t.* 279.

Le Harpé bleu-doré. *Cepede.* 4. *p.* 428. *pl.* 8. *f.* 2.

A LARGE and handsome species: colour yellow, with the head, back, and fins strongly tinged with green: scales middle-sized: dorsal and anal fin scaly at the base, widened and somewhat falcated at their extremities: tail deeply lunated: mouth wide: front teeth strong, the rest much smaller, except towards the back part of each jaw: eyes gold-colour. Native of the American seas: described and figured by Bloch from the drawings of Plumier.

I cannot help imagining this fish to be the same with the *Harpé bleu doré*, of the Count de Cepede, which he informs us was described from a drawing by Plumier. The Count places it in a distinct genus.

SALP SPARUS.

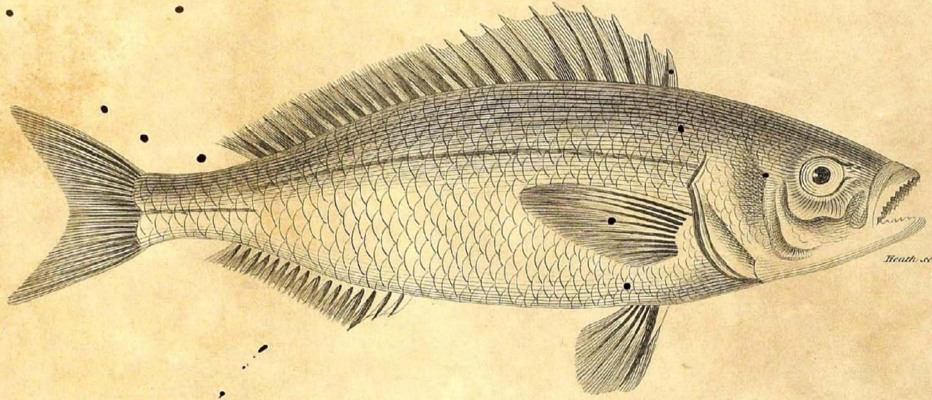
Sparus Salpa. *S. griseo-argenteus, dorso subfusco, corpore striis longitudinalibus subflavis, dentibus superioribus apice bifidis.*
Silvery-grey Sparus, with brownish back, body marked by yellowish longitudinal streaks, and upper teeth bifid at the tips.
Sparus Salpa. *Lin.* *Bloch. t.* 265.

SIZE and shape of a Carp; scales rather large: lateral line very distinctly marked: eyes yellow: tail scaly at the base. Native of the Mediterranean.

VIOLET SPARUS.

Sparus Violaceus. *S. violaceus, subtus subargenteus, pinnis subfuscis, oculis flavis.*
Violet-coloured Sparus, silvery beneath, with brownish fins and yellowish eyes.
Sparus chrysops. *Bloch. t.* 248.

SIZE and shape of a Carp, but rather longer bodied in proportion: scales rather large: lateral line interrupted near the tail: native regions unknown: introduced into the ichthyology of Dr. Bloch on the authority of a drawing in the collection of Mr. Link of Leipzic.



VIOLET SPARUS.

1808. July 1. London Publish'd by G. Kearsley, Fleet Street.

ANCHOR-TOOTHED SPARUS.

Sparus Anchorago. *S. flavescens, fusco transversim fasciatus, pinnis rubris, dentibus curvatis.*
Yellowish Sparus, with transverse brown bands, red fins, and curved teeth.
Sparus Anchorago. *Bloch. t.* 276.

SIZE and shape of a middling Carp: head tinged with red: dorsal fin dusky, with reddish tip, and between the spines of the fore-part are small elongations: rest of the fins red: scales rather large: eyes blue. Native of the Indian seas?

DOG-TOOTHED SPARUS.

Sparus Cynodon. *S. subargenteo-flavescens, pinnis rubris, dentibus caninis quatuor in maxilla superiore.*
Subargenteo-flavescent Sparus, with red fins, and four canine teeth in the upper jaw.
Sparus Cynodon. *Bloch. t.* 278.

SIZE and shape as in the preceding species: scales rather small than large: fins red, except the back-fin, which is yellow: eyes blue. Native of the Mediterranean.

FASCIATED SPARUS.

Sparus Fasciatus. *S. elongato-subquadratus albidus, subnigro transversim fasciatus, pinnis nigro marginatis.*

Lengthened subquadrate Sparus, with transverse dusky bands, and fins edged with black.

Sparus fasciatus. *Bloch. t.* 257.

A SINGULAR and curious species: size rather large: shape squarish-elongated: scales very large: head, gills, and abdomen cinereous, finely freckled with small whitish specks, as are also the edges of the fins: orbits of the eyes radiated with pale diverging streaks: dorsal and anal fin somewhat dilated behind, and stretching towards the tail, which is strongly lunated. Native of Japan.

ABILDGAARD'S SPARUS.

Sparus Abildgaardi. *S. albidus dorso subfusco, squamis magnis hexagonis.*

Whitish Sparus, with dusky back, and large hexagonal scales.

Sparus Abildgaardi. *Bloch. t.* 259.

SIZE and shape of a Carp: scales very large, and hexagonal; but those on the head and gill-covers are rounded: lateral line ramified on each scale over which it passes, and interrupted a little before the tail: eyes blueish; orbits radiated in a singular manner round the lower half by a series of tubular pores: native of the American seas, and named by Dr. Bloch from Professor Abildgaard, by whom the drawing was communicated.

GREEN-TAILED SPARUS.

Sparus Chlorourus. *S. subflavescens, squamis viridi arcuatis, pinnis viridibus, operculis roseis.*
Yellowish Sparus, with large scales crossed by a green band, green fins, and rose-coloured gill-covers.
Sparus Chlolourus. *Bloch. t.* 260.

A HIGHLY elegant species: in size and shape allied to the S. falcatus, but with a sharper front: scales large, and each marked across the middle by a curved green band: fins and tail green; the latter strongly lunated, and marked by minute pale specks: sides of the head marked by several small round spots: dorsal and anal fin somewhat dilated, and lengthened at the hind-part. Native of the American seas.

RED-FINNED SPARUS.

Sparus Erythropterus. *S. subargenteus, dorso subfusco, pinnis rubris.*
Subargenteous Sparus, with brownish back, and red fins.
Lutianus Erythropterus. *Bloch. t.* 259.

HABIT of a Perch: scales rather small than large: fins bright red, except the first part of the dorsal: tail but very slightly inclining to a divided form, being nearly even: teeth of moderate size, and sharp. Native of Japan.

BOAR SPARUS.

Sparus Verres. *S. albidus, dorso violaceo, pinna caudali rubra, dorsali & anali apice rubris.*

Whitish Sparus, with the back violet, the tail and tips of the dorsal and anal fin red.

Lutianus Verres. *Bloch. t.* 255.

Habit somewhat resembling that of the Sparus falcatus, but size smaller: scales rather large: dorsal and anal fins scaly at their base, and dilated and extended backwards towards the tips: eyes yellow: front teeth in both jaws very strong and curved somewhat like the tusks of a boar: the rest rather small: pectoral fins red at the base, and violet-coloured at the tips: ventral pale violet. Native of the Japanese sea.

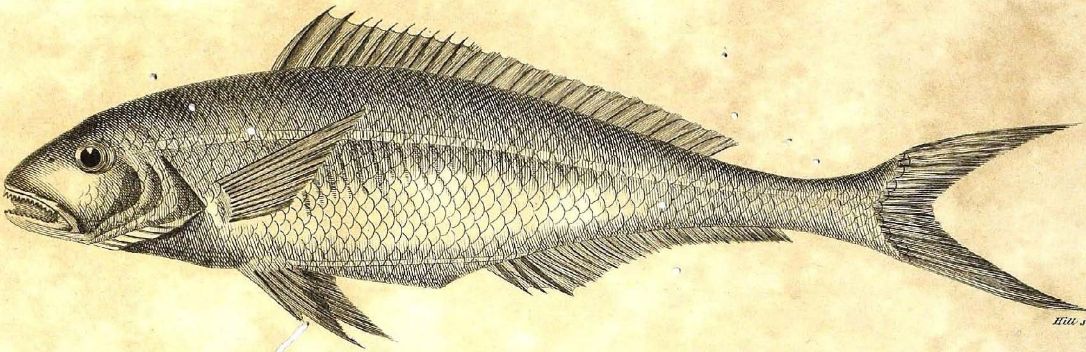
GOLD-TAILED SPARUS.

Sparus Chrysurus. *S. roseus, fascia longitudinali media pinnisque dorsali, anali, & caudali luteis.*

Rose-red Sparus, with longitudinal middle band, dorsal and anal fin and tail gold-yellow.

Sparus Chrysurus. *Bloch. t.* 262.

A highly elegant species: length about twelve inches: shape long and slender: colour bright rose-red, deepest on the back: from the gills to the tail on each side a gold-yellow stripe: a second on each side the bottom of the abdomen: scales of moderate size: pectoral and ventral fins dusky-violet: tail very sharply forked: teeth small and of equal size: native of the South-American seas.



Hill sculp.

GOLD-TAILED SPARUS.

1803. July 1 London Publish'd by G. Kearsley Fleet Street.

BLUE-BANDED SPARUS.

Sparus Vittatus. *S. flavescens, vittis utrinque tribus longitudinalibus cæruleis.*

Yellowish Sparus, with three longitudinal blue bands on each side.

Sparus vittatus. *Bloch. t.* 275.

Of a somewhat lengthened shape, like that of a Grayling: scales of moderate size: pectoral and ventral fins red: the rest yellow tinged with pale blue at the base: eyes red: tail large, and pretty deeply lunated. Native of Japan.

ORIENTAL SPARUS.

Sparus Cuning. *S. argenteus, dorso subcæruleo, corpore longitudinaliter flavo-striato, pinnis flavis, dorsali subviolaceo.*

Silvery Sparus with blueish back; the body striped longitudinally with yellow, the fins yellow, the dorsal pale-violet.

Sparus Cuning. *Bloch. t.* 263.

Length about seven inches: habit of a Dace, or rather more slender: tail greatly forked: scales of moderate size. Native of the Indian seas.

RUFOUS-BANDED SPARUS.

Sparus Hurta. *S. cauda bifida, corpore fasciis transversis rubris, dentibus laniariis exsertis. Lin. Gmel. p.* 1272.
Fork-tailed Sparus, with red transverse bands, and front teeth exserted.

Habit broad and thin: dorsal fin occasionally withdrawn into a longitudinal furrow: fore-teeth in the upper jaw prominent and strong: body marked by a few transverse reddish bands: native of the Mediterranean.

SPINED SPARUS.

Sparus Spinifer. *S. argenteo-rubescens, dorso lineisque corporis obscurioribus, spinis dorsalibus quinque mediis elongatis.*
Reddish-Silvery Sparus, with the back and lines on the body dusky, and the five middle spines of the dorsal fin elongated.
Sp. spinifer. *Lin. Gmel. Forsk. Arab. p.* 32.

Shape ovate: scales large: front-teeth in each jaw four, conic, strong, and remote: length a foot and half: native of the Red sea, inhabiting deep places: esteemed a very delicious fish for the table.

BULL-EYED SPARUS.

Sparus Boops. *S. olivaceo-flavus, subtus argenteus, lateribus aureo longitudinaliter striatis.*

Olivaceous-yellow Sparus, silvery beneath, with longitudinal gold-coloured streaks along the sides.

Sp. boops. *Lin. Gmel.*

Habit longish and subcylindric: colour olivaceous yellow, varying in splendour at different seasons: front teeth in the upper jaw obtuse and denticulated: native of the Mediterranean, but found also in the Indian seas.

SARB SPARUS.

Sparus Sarba. *S. ovato-oblongus argenteus, vittis longitudinalibus, subfuscis, linea aurea utrinque ad pinnas ventrales.*

Ovate-oblong silvery Sparus, with longitudinal brownish bands, and a gold-yellow line on each side near the ventral fins.

Sp. Sarba. *Lin. Gmel. Forsk. Arab. p. 31.*

Scales large: front-teeth close, conic: ventral fins yellow: dorsal recumbent occasionally in a longitudinal channel. Native of the Arabian seas.

TWO-BANDED SPARUS.

Sparus Bicinctus. *S. subviolaceus, vittis pluribus longitudinalibus flavis, capite cingulis duabus transversis nigris.*
Subviolaceous Sparus, with several longitudinal yellow bands, and two transverse black fillets round the head.
Sp. bivittatus. *Bloch. t.* 263.

LENGTH near six inches: habit of a Carp: all the fins pale yellow: scales middle-sized: tail pretty deeply forked. Native of the Indian seas?

SMARE SPARUS.

Sp. Smaris. *S. argenteus, ocello nigro laterali, pinnis pectoralibus caudaque rubris.*
Silvery Sparus, with a black lateral spot, and red pectoral fins and tail.
Sparus Smaris. *Lin.*

BACK of a reddish tinge: head marked by several pores: front teeth somewhat blunt and intermixed with smaller teeth: native of the Mediterranean.

BLACK-TAIL SPARUS.

Sparus Melanurus. *S. argenteus, dorso cæruleo, lateribus fusco longitudinaliter striato-maculatis, ocello nigro ad basin caudæ.*

Silvery Sparus, with blue back, sides stripe-spotted longitudinally with brown, and a black spot at the base of the tail.

Sparus melanurus. *Lin.*

Lower jaw thickly set with small sharp teeth: sides marked by dusky spots, and generally by a black spot on each side the tail. Native of the Mediterranean.

SILVER SPARUS.

Sparus Argenteus. *S. argenteus, macula utrinque prope caput nigra.*

Silvery Spare, with a black spot on each side near the head.

Sparus argentatus. *Lin. Gmel.*

Shape very deep, or like that of the Gilthead: length a few inches: native of the Japanese sea.

SYNAGRE SPARUS.

Sparus Synagris. *S. purpurascens, lineis utrinque septem aureis.*

Purplish Spare, with seven gold-coloured lines on each side.

S. Synagris. *Lin. Gmel. Catesb. Car. 2. t. 17.*

Length about ten inches: eyes large. Native of the American seas.

BROAD SPARUS.

Sparus Latus. *S. flavicans, capite argenteo, squamis longitudinaliter imbricatis.* *Lin. Gmel. p.* 1276.
Yellowish Sparus, with silvery head with longitudinally-imbricated scales.

A SMALL species: length three inches: habit broad and thin. Native of the Japanese sea.

VIRGATED SPARUS.

Sparus Virgatus. *S. depressus, oblongus, squamis virgatus.*
Depressed, oblong Sparus, with the scales disposed in rows.
Sp. virgatus. *Lin. Gmel.*

ALLIED to the Salp Sparus: head obtuse: native of Japan.

HASSARA SPARUS.

Sparus Hassara. *S. argenteus, lineis longitudinalibus fusco-flavescentibus.*
S. Hassara. *Lin. Gmel. Forsk. Arab.*

LENGTH about a span: on each side fourteen dusky streaks: front-teeth in each jaw strong, remote, obtuse: native of the Arabian seas, and esteemed for the table.

BERDA SPARE.

Sparus Berda. *S. squamis lateralibus singulis fascia transversa fusca, spinis dorsalibus recumbentibus.*

Whitish Sparus, with each of the side-scales marked by a transverse brown band, and with the rays of the dorsal fin recumbent in a furrow.

S. Berda. *Lin. Gmel. Forsk. Arab.*

Shape oval: scales large and rounded: native of the Arabian sea.

CHILI SPARUS.

Sparus Chilensis. *S. subargenteus, lineis utrinque transversis fuscis.*

Subargenteus Sparus, with five transverse brown lines on each side.

S. Chilensis. *Lin. Gmel. Molin. Chil.*

A very large species: shape ovate: head small: front-teeth strong and conic: scales large, rhomboidal, and spotted with white: lateral line curved in the direction of the back. Native of the South-American seas, and esteemed for the table.

GOLDEN-EYED SPARUS.

Sparus Chrysops. *S. cærulescens, dorso canaliculato, iridibus aureis.*
Blueish Sparus, with channelled back, and golden irides.
S. chrysops. *Lin. Gmel.* Aurata Bahamensis. *Catesb. Car.* 2. *t.* 16.

Head variegated with blue streaks: pectoral, ventral, anal, and caudal fins blue: native of the American seas.

SPINE SPARUS.

S. Spinus. *S. cæruleo-variatus, spina dorsali recumbente.*
Sparus with blue variegations, and recumbent dorsal spine.
S. Spinus. *Lin. Gmel.*

Native of the American and Indian seas.

MORMYRE SPARUS.

Sparus Mormyrus. *S. argenteus, fasciis plurimis transversis nigris.*
Silvery Sparus, with numerous transverse black bands.
S. Mormyrus. *Lin. Gmel.*

Native of the Mediterranean: length five or six inches: tail bordered with black at the tip.

BROWNISH SPARUS.

Sparus Fuscescens. *S. fuscescens, squamis aureis, macula nigra ad pinnas pectorales. Lin. Gmel. p.* 1279.

Brownish Sparus, with the scales tinged with gold-colour, and a black spot at the pectoral fins.

Habit rather broad: length about four inches: native of the Japanese sea.

OSBECK'S SPARUS.

Sparus Osbeckii. *S. corpore longitudinaliter cæruleo flavoque fasciato, capite rubro cæruleoque variato.*

Sparus with the body longitudinally striped with blue and yellow, and the head varied with red and blue.

Spare Osbeck. *Cepede. 4. p.* 107.

Length a few inches: on each side, above the lateral line a black spot: native of the Mediterranean.

VARIEGATED SPARUS.

Sparus Variegatus. *S. argenteus, corpore nigro transversim variato, cauda nigro marginata.*

Silvery Sparus, with the body transversely variegated with black, and the tail bordered with black.

S. bigarré. *Cepede. 4. p.* 109.

Shape oval: native of the Mediterranean.

MARSEILLES SPARUS.

Sparus Massiliensis. *S. flavus, lateribus fusco maculatis, fasciis longitudinalibus brevibus versus caudam.*
Yellow Sparus, with the sides spotted with brown, and marked by short longitudinal bands toward the tail.
S. Massiliensis. *Cepede.*

NATIVE of the Mediterranean.

CASTANEOLA SPARUS.

Sparus Castaneola. *S. dorso nigro, lateribus cæruleis, abdomine argenteo.*
Sparus with black back, blue sides, and silvery abdomen.
S. Castagnole. *Cepede.* 4.

LOWER jaw longer than the upper: fore parts deeper or more elevated than the hind: head rounded in front: mouth prominent, and rounded: fins blue, except the pectoral, which are yellow. Native of the Mediterranean.

BRUNNICH'S SPARUS.

Sparus Brunnichii. *S. ovalis argenteus, linea laterali fusca.*
Oval silvery Sparus, with brown lateral line.
S. Bogaraveo. *Cepede. 4. p.* 112.

LENGTH a few inches: in the dorsal fin are twelve sharp, and thirteen soft rays: in the anal fin three sharp, and thirteen soft: native of the Mediterranean: observed by Brunnich.

MAHSENA SPARUS.

Sparus Mahsena. *S. fuscus lineatus, fasciis transversis nebulosis argenteis.*

Dusky, lineated Sparus, with clouded, transverse, silvery bands.

Sciæna Mahsena. *Lin. Gmel. Forsk. Arab.*

Shape ovate oblong: in each jaw eighteen strong conic teeth, besides some setaceous ones in the jaws, and the obtuse grinders: fins reddish-violet, with small ramenta or appendices. Native of the Arabian seas.

HARAK SPARUS.

Sparus Harack. *S. virescens, pinnis rubescentibus, macula utrinque lineari nigra infra lineam lateralem.*

Greenish Sparus, with reddish fins, and a linear black mark on each side near the lateral line.

Sciæna Harak. *Lin. Gmel. Forsk. Arab.*

Much allied to the S. Mahsena: four pretty strong front-teeth in each jaw: the remainder growing gradually larger: besides these are several setaceous ones: the lateral mark mentioned in the specific character is rectangular, and bounded by a dusky cloud. Native of the Arabian seas.

RAMAK SPARUS.

Sparus Ramak. *S. albido-virescens, lineis longitudinalibus obsoletis violaceo-flaventibus, pinnis rubentibus.*
Whitish-green Sparus, with longitudinal yellowish-violet lines, and reddish fins.
Sciæna Ramak. *Lin. Gmel. Forsk. Arab.*

Greatly allied, except in colour, to the *Mahsena*, and native of the same seas.

GREAT-EYED SPARUS.

Sparus Grandoculis. *S. cærulescens, oculis magnis, labio inferiore gibbo.*
Blueish Sparus, with large eyes, and gibbous lower lip.
Sciæna grandoculis. *Lin. Gmel. Forsk. Arab.*

Allied to S. Mahsena: shape ovate-oblong, with obscure longitudinal streaks: in each jaw six front-teeth: fins pale violet: pectoral fins pale red: the dorsal and anal each increased by a lobe at the hind part: native of the Arabian seas.

SILVER-EYED SPARUS.

Sparus Argyrops. *S. cauda lunata, dorso canaliculato, oculorum iridibus argenteis. Lin. Syst. Nat. Gmel. p.* 1277.
Sparus with lunated tail, channelled back, and silvery irides.
Zanthurus Indicus. *Will. ichth. app. t.* 3.

Allied to Sp. Chrysops: the three first rays of the dorsal fin are elongated. Native of the American seas.

GOLD-GREEN SPARUS.

Sp. Viridi-Aureus. *S. olivaceo-flavescens, fasciis quinque annularibus nigris, pinnis pectoralibus basi atrocæruleis.*

Olivaceo-flavescent Sparus, with five annular black bands, and the pectoral fins blueish-black at the base.

Le Spare Vertor. *Cepede.* 4. *p.* 131.

A very small species: described by Cepede from Commerson, who observed it in vast shoals following the ships in the Indian seas, particularly about the coasts of New Guinea: body covered with small scales.

MYLOSTOME SPARE.

Sparus Mylostomus. *S. aureo cæruleoque longitudinaliter undulatus, macula utrinque versus caudam nigra.*

Sparus longitudinally undulated with blue and yellow, with a black spot on each side near the tail.

Spare Mylostome. *Cepede.* 4. *p.* 131.

In habit resembling a Coryphene, except that the front is less sloping: jaws beset with fine teeth, in the manner of a file: tongue short and cartilaginous: eyes large and prominent: scales striped, and slightly crenated on the edges: general colour deep yellow, paler on the pectoral fins, and mixed with green on the dorsal fin and tail, at the end of which are two black spots, so placed as to resemble in some degree the figure of a pair of spectacles. Observed by Commerson in the Indian seas: size not particularized.

MYLIO SPARUS.

Sparus Mylio. *S. flavescens, lineis longitudinalibus interruptis fuscis, corpore antice fascia duplici transversa nigra.*

Yellowish Sparus, with interrupted longitudinal brown bands, and the fore-part marked by a double transverse black band.

Spare Mylio. *Cepede.* 4. *p.* 132.

Much allied to the Mylostome: size that of a common Carp: scales large: in the upper jaw six somewhat prominent front-teeth: upper lip extensile: Native of the Indian seas: observed by Commerson.

COMMERSONIAN SPARUS.

Sparus Commersonii. *S. argenteus, lineis lateralibus interruptis fuscis maculatus.*

Silvery Sparus, spotted with interrupted brown lateral lines.

Spare Breton. *Cepede.* 4. *p.* 132.

A small species: lower lip extensile to a very considerable degree: observed about the coasts of the Isle of France.

GOLDEN-LINED SPARUS.

Sparus Aureo-lineatus. *S. lineis aureis longitudinalibus, dorso postico macula oblonga argentea, pinnis rubris.*

Sparus with longitudinal gold-coloured lines, hind part of the back marked by an oblong silvery spot, and red fins.

Sp. aureo-lineatus. *Cepede. 4. p.* 132.

A SMALL species: native of the Indian seas.

BLACK-TAIL SPARUS.

Sparus Melanurus. *S. fuscus, abdomine albido, corpore lineis longitudinalibus luteis, cauda nigra albo-marginata.*

Brown Sparus, with whitish abdomen; body marked by longitudinal yellow lines, and black tail bordered with white.

Perca melanura. *Lin. Catesb. Car.* 2. *t.* 7.

SIZE of a small Perch: native of the American seas.

LEAPING SPARUS.

Sparus Saltator. *S. griseus, cauda bifurca postice rubra, abdomine luteo griseo-lineato.*

Greyish Sparus, with the tail red towards the tip, and abdomen yellow streaked with grey.

Perca sectatrix. *Lin. Catesb. Car.* 2. *t.* 8. *f.* 2.

SIZE of a small Perch: has a habit of frequently leaping out of the water, and, according to some, of following ships, in their swiftest course.

POISONOUS SPARE.

Sparus Venenosus. *S. griseus, corpore punctis sanguineis notato, pinnis pectoralibus apice flavis.*

Greyish Sparus, with the body sprinkled with sanguine spots, and the pectoral fins yellow at the tips.

Perca venenosa. *Lin.* *Catesb. Car.* 2. *p.* 5.

A MIDDLE-SIZED species: native of the American seas; and, like several other fishes in those regions, reputed poisonous at some particular seasons: probably, from feeding on some acrimonious kinds of Mollusca, &c.

SALIN SPARUS.

Sparus Salin. *S. argenteo-cæruleus, macula utrinque nigra, pinnis flavis.*

Silvery-blue Sparus, with a black spot on each side, and yellow fins.

Sparus Salin. *Cepede.* 4. *p.* 137. Perca unimaculata. *Bloch.* *t.* 308. *f.* 1.

A SMALL species: native of the Brasilian seas: habit broad: beneath the lateral line a few longitudinal yellow streaks.

JUBA SPARUS.

Sparus Juba. *S. argenteus, dorso violaceo, pinnis flavo luteoque variatis, cauda bimaculata.*
Silvery Sparus, with violet back, fins varied with yellow and orange, and tail marked by two spots.
Perca Juba. *Bloch. t.* 311. *f.* 1.

Back much elevated: head marked by a black band from eye to eye: on the tail two black spots: size rather larger than that of the Selim. Native of the American seas.

DUSKY-BACKED SPARUS.

Sparus Melanotus. *S. argenteus, dorso nigricante, pinnis apice rubentibus.*
Silvery Sparus, with dusky back, and fins reddish at the tips.
Perca argentata. *Bloch. t.* 311. *f.* 1.

Native of the Japanese seas: teeth small.

NIPHON SPARUS.

Sparus Niphon. *S. albus, dorso subfusco, lateribus lineis longitudinalibus flaventibus.*
White Sparus, with brownish back, and sides marked by longitudinal yellowish lines.
Perca Japonica. *Bloch. t.* 311. *f.* 2.
Sparus Niphon. *Cepede.* 4. *p.* 141.

Native of the Japanese seas, in which the isle of Niphon forming the principal feature, Cepede calls

this species by its name. Dr. Bloch, with perhaps equal propriety, considered it as a Perch, under the title of *Perca Japonica*. In fact, in the numerous tribe of thoracic fishes many species may be found which can hardly be said to belong, with strict propriety, to any of the established genera.

BLUE SPARUS.

Sparus Cæruleus. *S. totus cæruleus, squamis magnis hexagonis radiatis.*

Sparus entirely of a blue colour, with large hexagonal radiated scales.

S. Holocyaneose. *Cepede. 4. p.* 141.

Slightly described by Cepede from one of Plumier's drawings, in which it is called *Turdus marinus totus cæruleus*, a fine blue being the universal colour of the fish. It is dangerous to attempt descriptions of animals from drawings alone: a practice to which the Count de Cepede seems in many instances too much devoted. The pectoral fins in this species are falcated, and the tail deeply lunated: the head without scales, and the jaws of equal length: native of the American seas.

SCALY-TAILED SPARUS.

Sparus Lepisurus. *S. maculis utrinque duabus fuscis, cauda ultra basin squamosa.*
Sparus with two brown spots on each side, and tail scaled beyond the base.
S. Lepisure. *Cepede. 4. p.* 142.

NATIVE of the Indian seas: mentioned by Cepede from the MSS. of Commerson: dorsal and anal fin scaly at the base; the tail still more so.

MOON SPARUS.

Sparus Luna. *S. latus, ruber, dorso cæruleo, lateribus luteo variatis, linea laterali lutea.*
Red Sparus, with broad body, blue back, sides varied with yellow, and yellow lateral line.
S. Demi-Lune. *Cepede. 4. p.* 142.

DESCRIBED by Cepede from a drawing by Plumier: size considerable: body deeper than long: pectoral fins twice the length of the ventral: sides marked by several irregular gold-coloured spots: back blue: tail deeply lunated: native of the American seas.

BILOBATE SPARUS.

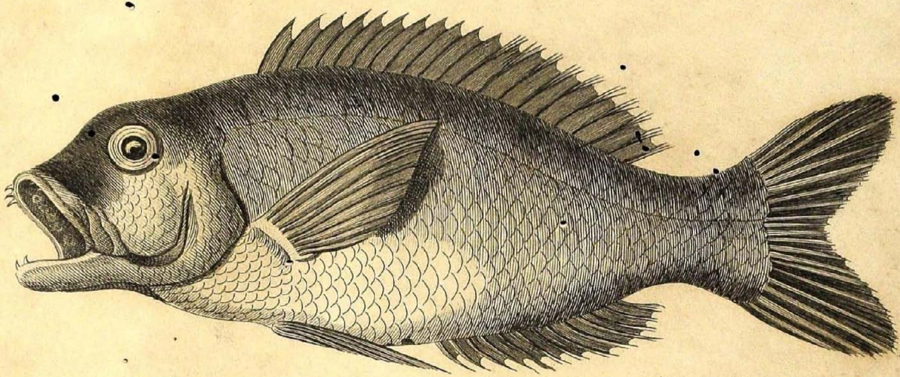
Sparus Bilobatus. *S. cauda biloba, lobis rotundatis.*
Sparus with bilobate tail, with the lobes rounded.
Le Bilobé. *Cepede.* 4. *p.* 143.

Mentioned by Cepede from Commerson: native of the Indian sea.

CARDINAL SPARUS.

Sparus Cardinalis. *S. ruber, abdomine roseo.*
Deep-red Sparus, with rose-coloured abdomen.
Spare Cardinal. *Cepede.* 4. *p.* 143.

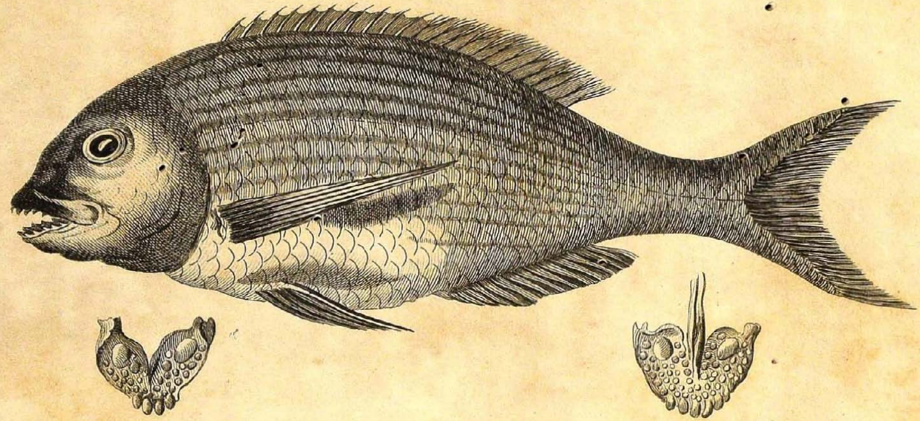
Described by Cepede on the authority of some Chinese drawings in the Prince of Orange's collection: the deep-red colour of the upper parts and the rose-colour of the lower are abruptly separated: between the eyes is a kind of raised skin, reaching forwards like a hood as far as the tip of the upper jaw.



Heath sculp.

BILOBATE SPARUS.

1803 July 1. London Publish'd by G. Kearsley Fleet Street.



Heath sculp.

BUFONITE SPARUS.

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CHINESE SPARUS.

Sparus Sinensis. *S. ruber, lineis quatuor longitudinalibus flavis, abdomine flavo, cauda supra radio elongato nudo.*

Red Sparus, with four longitudinal yellow lines, abdomen yellow, and tail furnished at the upper part with a long naked ray.

Mentioned by Cepede from the same Chinese drawings which afforded the former species: pectoral and ventral fins yellow.

BUFONITE SPARUS.

Sparus Bufonites. *S. pallidus, striis utrinque longitudinalibus numerosis fuscis.*

Pale Sparus, with numerous longitudinal brown lines on each side.

Sp. Bufonite. *Cepede.* 4. *p.* 143.

Described by Cepede from Commerson, who presented its figure to the Count de Buffon: habit that of a Gilthead, and the pavement of molares * in the mouth exactly resembling those of the Gilthead: all that is said of the colour of this species is that on each side are eleven or twelve longitudinal stripes.

* These, when found fossil, are often termed *bufonites,* as well as those of the Anarhichas Lupus or Wolf-fish.

PARROT SPARUS.

Sparus Psittacus. *S. rostro curvato, corpore utrinque longitudinaliter striato.*
Sparus with curved snout, and longitudinally-striated body.
Spare Perroquet. *Cepede. 4. p. 47.*

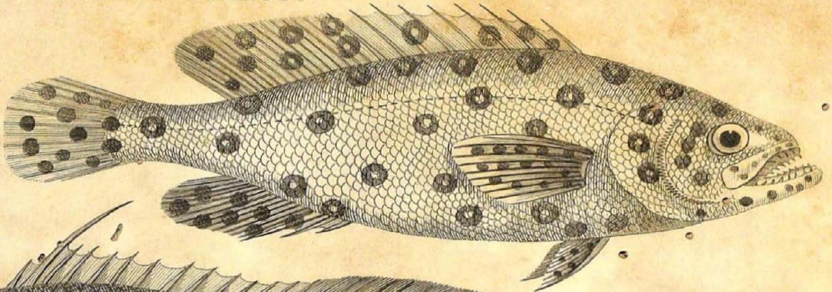
Much allied to the preceding species: observed by Commerson in the Indian seas.

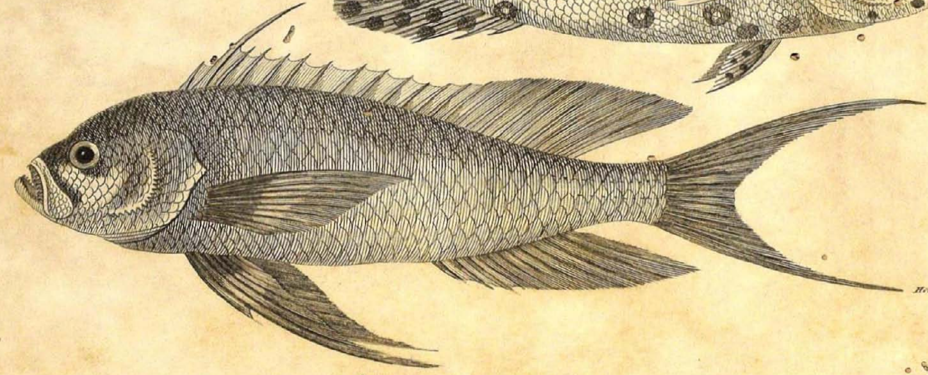
VIRGINIAN SPARUS.

Sparus Virginicus. *S. fasciis duabus transversis nigris, lineis plurimis longitudinalibus cæruleis.*
Sparus with two black transverse bands, and numerous longitudinal blue lines.
Sparus Virginicus. *Lin. Gmel.*

Gill-covers subserrated: body marked by numerous parallel longitudinal streaks: the first black band passes across the eyes: the second from the shoulders, over the sides of the thorax, to the pectoral fins; tail bilobate and obtuse. Native of the American seas.

ARGUS SPARUS.





Heath sculp.

ANTHIA SPARUS.

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ANTHIA SPARUS.

Sparus Anthias. *S. argenteo-rosaceus, pinnis ventralibus falcatis, radio secundo dorsali elongato, cauda elongato-forficata.*
Silvery rose-coloured Sparus, with falcated ventral fins, second ray of the dorsal fin elongated, and long-forked tail.
Labrus Anthias. *Lin. Gmel.* Anthias sacer. *Bloch.*

Colour a beautiful rose red, deepest on the back, fins and tail: sides and abdomen silvery: tail extremely forked: scales of moderate size: length about twelve or fifteen inches: native of the Mediterranean, and popularly known by the title of Barber-fish, on account of the long and sharp ray of the dorsal fin.

ASCENSION SPARUS.

Sparus Ascensionis. *S. gracilis, supra rubescens, subtus albicans, squamis transversis.*
Slender reddish Sparus, whitish beneath, with scales disposed in transverse ranges.
Sparus Ascensionis. *Lin. Gmel.*

Native of the Isle of Ascension: gill-covers serrated, with two of the teeth longer than the rest.

STIGMA SPARUS.

Sparus Stigma. *S. pinna dorsali ramentacea, operculis inustis. Lin. Syst. Nat.*

Sparus with ramentose dorsal fin and gill-covers marked by a spot resembling the impression of a hot iron.

Perca Stigma. *Lin. Gmel.*

PENTAGRAM SPARUS.

Sparus Pentagramma. *S. fasciis quinque longitudinalibus albis fuscisque alternis, pinna dorsali ramentacea.*

Sparus with the body marked by five longitudinal alternate brown and white bands.

Perca lineata. *Lin. Gmel.*

Described by Linnæus in the Museum Adolphi Friderici as a species of Sciæna. Native region unknown.

SILVERY SPARUS.

Sparus Argenteus. *S. argenteus, pinna dorsali macula nigra, naribus tubulosis.*

Silvery Sparus, with tubular nostrils, and a black spot on the dorsal fin.

Perca argentea. *Lin. Gmel.*

Native of the American seas: described by Linnæus in the Museum Adolphi Friderici.

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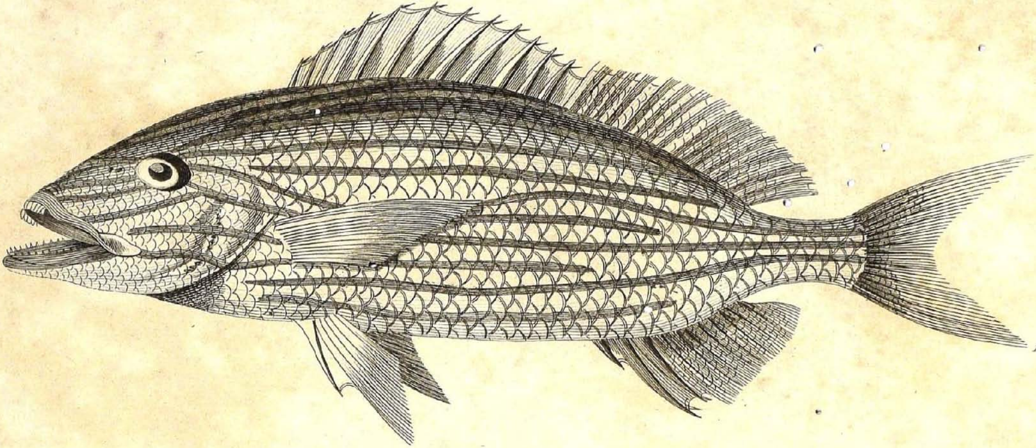

Hill sculp.

SQUIRREL SPARUS.

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SERRAN SPARUS.

Sparus Serran. *S. flavicans, fasciis quatuor longitudinalibus sanguineis.*

Yellowish Sparus, with four longitudinal blood-red bands.

Perca Cabrilla. *Lin. Mus. Ad. Frid.* 2.

Dorsal fin sometimes slightly ramentose. Native of the Mediterranean: said sometimes to vary, in having the stripes rather violet than red.

SQUIRREL SPARUS.

Sparus Sciurus. *S. griseus, squamis magnis flavo marginatis, capite longitudinaliter cæruleo flavoque lineato.*

Grey-brown Sparus, with large scales bordered with yellow, and head marked longitudinally by numerous blue and yellow lines.

Perca formosa. *Lin.* Anthias formosus. *Bloch.*

Size of a common Perch: native of the American seas, where it is known by the name of the Grunt, or Squirrel-fish. In colours it seems to vary, Dr. Bloch's plate representing it of a yellow colour, striped along the body as well as the head with blue lines.

HAMRUR SPARUS.

Sparus Hamrur. *S. cupreo-ruber, pinnis obscurioribus, ore subverticali.*

Copper-red Sparus, with darker-coloured fins, and subvertical mouth.

Sciæna Hamrur. *Lin.* *Forsk. Arab.*

Scales small and membranaceous at the margin: teeth small, subulate, and of equal size: tail lunated. Native of the Arabian seas.

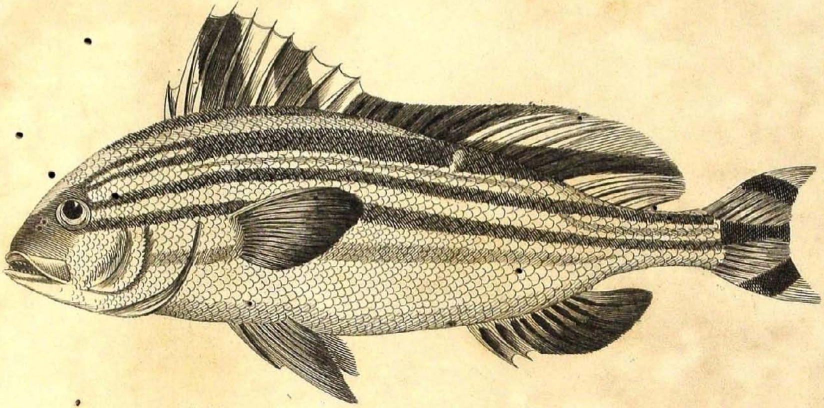
DIAGRAM SPARUS.

Sparus Diagramma. *S. albus, fasciis longitudinalibus fuscis.*

White Anthias, with longitudinal brown bands.

Perca Diagramma. *Lin.* Anthias Diagramma. *Bloch.*

Size of a Perch: colour white, elegantly marked on the upper part by four or five longitudinal deep-brown bands: fins and tail varied with brown. In the living fish the bands are probably yellow, since in the Systema Naturæ they are so described: in spirits however they appear brown: scales small: native of the Indian seas?



Hill sculp.

DIAGRAM SPARUS.

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SILVER-EYED SPARUS.

Sparus Argyropthalmus. *S. flavus abdomine argenteo, oculis maximis, cauda subcærulea.*

Yellow Sparus, with silvery abdomen, extremely large eyes, and blueish tail.

Anthias macropthalmus. *Bloch. t.* 319.

Size of a Perch: scales rather small: eyes silvery with a tinge of blue: native of Japan.

STRIATED SPARUS.

Sparus Striatus. *S. corpore luteo longitudinaliter striato, cauda albida.*

Sparus with longitudinal yellow streaks, and whitish tail.

Perca striata. *Lin. Gmel.*

Greatly allied to the *Sparus melanurus*, from which it is said principally to differ in having the tail whitish instead of black. Native of the American seas.

VOSMAER'S SPARUS.

Sparus Vosmaeri. *S. rubro-purpureus, fascia utrinque longitudinali flava, pinna dorsali analique violaceis.*

Purplish-red Sparus, with a longitudinal yellow stripe on each side, and violet dorsal and anal fin.

Anthias Vosmaeri. *Bloch. t.* 321.

Size of a Perch: scales rather large than small: mouth and teeth small: pectoral, ventral, and caudal fins bright red. Native of Japan.

ELLIPTIC SPARUS.

Sparus Ellipticus. *S. albidus, dorso subfusco, ellipsi duplicata violacea notato.*

Whitish Sparus, with brownish back, marked by a doubled, violet-coloured ellipsis.

Anthias bilineatus. *Bloch. t.* 325. *f.* 1.

Size of a small Perch: along the back several dusky streaks, and on each side two parallel, deep-violet stripes, curving upward in such a manner as to form two large concentric ellipses on the back: scales middle-sized: anal fin black on the fore-part, and orange behind. Native of Japan.

JAPANESE SPARUS.

Sparus Japonicus. *S. luteus, dorso transversim cæruleo-lineato, pinnis rubentibus.*

Yellow Sparus, with the back crossed by blue lines, and reddish fins.

Anthias Japonicus. *Bloch. t.* 325. *f.* 2.

Size and habit of the preceding species: dorsal fin marked along its fore-part by a dusky band; the hind-part, with the other fins and tail red. Native of Japan.

HEXAGONAL SPARUS.

Sparus Hexagonus. *S. corpore hexagono-elongato.*
Sparus with hexagonally-elongated body.
Lutianus hexagonus. *Cepede. 4. p. 214.*

Eyes very large: scales strongly striated: vertical diameter of the tail much less than that of the body: all the laminæ of the gill-covers denticulated: teeth rather blunt, and in several rows in each jaw: described by Cepede from a specimen in the Prince of Orange's Museum.

LUNULATED SPARUS.

Sparus Lunulatus. *S. rubescens, lunula caudali nigra.*
Reddish Sparus with black caudal crescent.
Perca lunata. *Lin. Trans. 3. p. 33.*

Size of a small Perch: scales middle-sized: pectoral and ventral fins lanceolate: tail slightly forked. Observed by Mr. Mungo Park about the coasts of Sumatra.

GOLD-BANDED SPARUS.

Sparus Aureo-vittatus. *S. albicans, vitta longitudinali flava.*
Whitish Sparus, with yellow longitudinal band.
Perca aurata. *Lin. Trans. 3. p. 33.*

Observed by Mr. Park about the coasts of Sumatra.

NAKED-HEADED SPARUS.

Sparus Gymnocephalus. *S. capite squamis destituto, pinna dorsali antice triangulari elevata, radio secundo elongato.*
Sparus with head destitute of scales, and dorsal fin high and triangular in front, with the second ray elongated.
Lutianus gymnocephalus. *Cepede.* 4. *p.* 181.

Head and gill-covers destitute of scales: lower lip longer than the upper: first part of the dorsal fin very high and triangular, and the second ray longer than the rest. Described by Cepede from Commerson: native of the Indian seas.

TRIANGLE SPARUS.

Sparus Triangulum. *S. labiis duplicatis, macula caudali nigra trigona albo-marginata.*
Sparus with doubled lips, and tail marked by a triangular black spot, edged with white.
Lutianus Triangulum. *Cepede.*

Mentioned by Cepede from Commerson: native of the Indian seas.

SMALL-MOUTHED SPARUS.

Sparus Microstomus. *S. albidus, fusco-maculatus, capite conico-elongato, ore parvo.*

Whitish Sparus, with conically-elongated head, and small mouth.

Lutianus Microstomus. *Cepede.*

NATIVE of the Indian seas: described by Cepede from Commerson: body covered with minute, irregular, dusky spots.

INSIDIOUS SPARUS.

Sparus Insidiator. *S. ruber, lateribus flavescentibus, cauda subforcipata, rostro longissimo.*

Red Sparus, with yellowish sides, subforcipated tail, and very long snout.

Sparus Insidiator. *Lin. Gmel.*

LENGTH about ten inches: head compressed, scaly: snout very long: mandibles divided, and each furnished in front with two teeth of larger size than the rest: scales on the body rather large: fins yellowish; the dorsal and anal varied with green stripes: native of the Indian seas, where it preys chiefly on insects, exploding against them a drop of water from its tubular snout, in the same manner as the *Chætodon rostratus.*

With even, or rounded tail.

ORPH SPARE.

Sparus Orphus. *S. rubro-purpureus, macula utrinque nigra prope caudam.*
Reddish-purple Sparus, with a black spot on each side near the tail.
Sparus Orphus. *Lin. Gmel.*

INHABITS the Mediterranean: said to be remarkably tenacious of life.

MAROON SPARUS.

Sparus Chromis. *S. fuscus, striatus, macula utrinque nigra ad pinnas ventrales, radio secundo elongato.*
Brown, striated Sparus, with a black spot on each side at the base of the ventral fins, of which the second ray is elongated.
Sparus Chromis. *Lin. Gmel.*

HEAD small: sides marked with longitudinal streaks of a lighter hue than the ground-colour. Native of the Mediterranean, where it is often observed in small shoals.

RHOMBOID SPARUS.

Sparus Rhomboides. *S. subrhombeus griseus, luteo longitudinaliter striatus, macula utrinque versus caput nigra.*
Subrhomboid grey Sparus, with yellow longitudinal streaks, and a black spot on each side towards the head.
S. rhomboides. *Lin. Gmel.*

Shape subrhomboid, and very deep: size of a Perch: colour cinereous, with yellow stripes: fins and tail yellow. Native of the American seas. If this species be the *Perca rhomboidalis* of Catesby there must be a mistake either in his figure, or in the arrangement of the species, since he represents it with the tail pretty deeply forked.

RETICULATED SPARUS.

Sparus Reticulatus. *S. fuscus, corpore albo-reticulato.*
Brown Sparus, with the body reticulated with white.
Sparus capistratus. *Lin. Gmel.*

Shape oblong, resembling that of a Holibut: scales loosely imbricated, and each marked towards the end by a squarish white spot or bar, causing a reticular appearance on the body: in the upper jaw two large front-teeth, and in the lower four: dorsal fin almost the length of the back: native of the American seas.

GALILÆAN SPARUS.

Sparus Galilæus. *S. virescens, abdomine albido.*
Greenish Sparus, with whitish abdomen.
Sparus Galilæus. *Lin.* *Hasselq. it.* 343.

Native of Palestine, inhabiting the lake Genesareth, in which being very common it is supposed to have been the principal species in the miraculous draught of fishes recorded by St. Luke.

ROCK SPARUS.

Sparus Rupestris. *S. griseus, fusco transversim fasciatus, pinna dorsi ramentacea, antice macula fusca.*
Grey Sparus, with dusky transverse bands, and ramentose dorsal fin, marked on the fore-part by a black spot.
Labrus rupestris. *Lin. Gmel.* Lutianus rupestris. *Bloch.*

Native of the Northern seas, frequenting the shores: size of a small Perch: from the eyes to the mouth on each side three blue stripes.

PEACOCK SPARUS.

Sparus Pavo. *S. albidus, dorso subfusco, ocello utrinque nigro ad humeros et ad basin caudæ.*

Whitish Sparus, with brownish back, and an ocellated black spot on each side the shoulders and base of the tail.

Sparus saxatilis. *Lin. Gmel. Bloch. t.* 309.

Length about twelve inches: shape somewhat like that of a Pike: from the eye strait along the gill-covers on each side a black line: dorsal, anal, and caudal fin marked with numerous round white spots: pectoral and ventral plain: the black spot on each side at the shoulders and tail bordered with white. Native of the South-American seas, and esteemed as a food.

RADIATED SPARUS.

Sparus Radiatus. *S. olivaceo-fuscus, cæruleo-maculatus, subtus flavescens, oculis rubris, orbitis cæruleo-radiatis.*

Olive-brown Sparus, spotted with blue, beneath yellowish, with red eyes and blue-rayed orbits.

Sparus radiatus. *Lin.* Turdus oculo radiato. *Catesby.*

Size of a Carp: at the base of each scale a blue spot: fins yellow, with a narrow border of blue: tail brown at the base, and orange at the tip: beneath the breast a transverse orange band: native of the American seas.

LIVID SPARUS.

Sparus Lividus. *S. livens, gula marginibusque pinnarum cæruleis, pinna dorsali ramentacea.*

Livid-brown Sparus, with the fins bordered with blue, and the dorsal fin ramentose*.

Labrus livens. *Lin. Gmel.*

LENGTH about twelve inches: colour livid brown: lateral line at first curved, and afterwards strait. Native of the Mediterranean.

VARIEGATED SPARUS.

Sparus Varius. *S. purpureo, viridi, cæruleo, nigroque varius.*

Sparus variegated with green, purple, black, and blue.

Sparus varius. *Lin. Gmel. Will. p.* 306.

A BEAUTIFUL species: teeth in the upper jaw strong and close-set: beneath the abdomen two purplish red spots: tail blue: native of the Mediterranean, and said to be excellent for the table.

* Furnished with small processes projecting beyond the membrane.

BLACK-FINNED SPARUS.

Sparus Melanopterus. *S. purpurascens, abdomine flavo-virente, oculis viridi-radiatis, pinnis nigris.*
Purplish Sparus, with yellow-green abdomen, green-rayed orbits, and black fins.
Labrus melapterus. *Bloch. t.* 285.

A BEAUTIFUL species: length about twelve inches: in each jaw two large front-teeth: pectoral fins pale. Native of Japan.

GREEN-FINNED SPARUS.

Sparus Chloropterus. *S. viridis, abdomine subflavente, capite fusco cæruleo-lineato.*
Green Sparus, with yellowish abdomen, and brown head striped with blue.
Labrus chloropterus. *Bloch. t.* 288.

LENGTH about ten inches: scales rather large: two pretty large front-teeth in each jaw: fins green; the dorsal marked on the hind-part by small pale spots. Native of Japan.

ZONATED SPARUS.

Sparus Zonatus. *S. fuscus, fasciis transversis albidis, capite virescente.*
Brown Sparus, with transverse whitish bands, and greenish head.
Labrus fasciatus. *Bloch. t.* 290.

Length about a foot: scales middle-sized: eyes red: dorsal, anal, and caudal fin blackish. Native of Japan.

PUNCTULATED SPARUS.

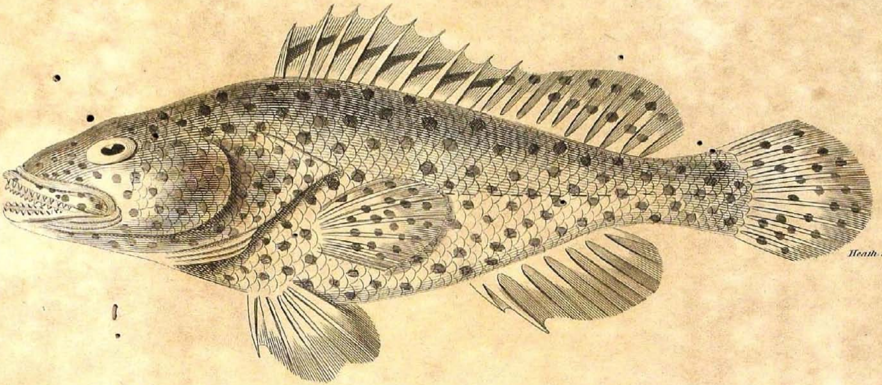
Sparus Punctulatus. *S. subfuscus, punctis numerosis cæruleis, abdomine albido.*
Brownish Sparus, with numerous blue specks, and whitish abdomen.
Perca punctulata. *Lin. Gmel. Bloch. t.* 314.

Size of a Perch: upper parts pale rufous-brown, lower parts white or silvery: the whole body thickly marked with small round blue spots: fins reddish: teeth rather small, and of equal size: native of the American seas.

SANGUINE SPARUS.

Sparus Cruentatus. *S. roseo-argenteus, sanguineo-punctatus.*
Silvery-rose-coloured Sparus, with blood-red specks.
Perca guttata. *Lin. Bloch. t.* 312.

Size of a common Perch: colour a beautiful deep rose-red, with a silvery cast on the sides and abdo-


Heath sculp.

SANGUINE SPARUS.

1803 July 1. London Publish'd by G. Kearsley Fleet Street.

men, and the whole fish pretty thickly marked with small, round, deep blood-red spots: eyes yellow. Native of the American seas.

ATLANTIC SPARUS.

Sparus Atlanticus. *S. fusco-flavescens, punctis numerosis rubris.*
Yellow-brown Sparus, with numerous red specks.
Perca maculata. *Bloch. t.* 313.
Sparus Atlanticus. *Cepede.* 4. *p.* 158.
Var? *Catesb. Carol.* 2. *t.* 14.

Colour yellowish, with the back brownish, and abdomen pale: the whole fish thickly marked on all parts with small, round red spots, with dark centres: size of the two preceding species: native of the American seas.

Of this species a supposed variety is mentioned by Cepede, from a drawing by Plumier, and is of a brown or blackish colour, each of the red spots being marked in the middle by a deeper red. It is called by Plumier *Turdus alius niger, maculis purpureis oculatus.* This is probably the fish figured by Catesby under the name of the *Hind.*

BLACK-BANDED SPARUS.

Sparus Chrysomelanos. *S. luteus, fasciis novem transversis nigricantibus.*

Yellow Sparus, with nine transverse blackish bands.

Spare chrysomelane. *Cepede. 4. p. 53.*

DESCRIBED by Cepede from a drawing by Plumier: lower jaw longer than the upper: lips thick: eyes large: all the fins marbled with pale blue and flesh-colour: length four or five decimetres: native of the American seas.

HEMISPHERIC SPARUS.

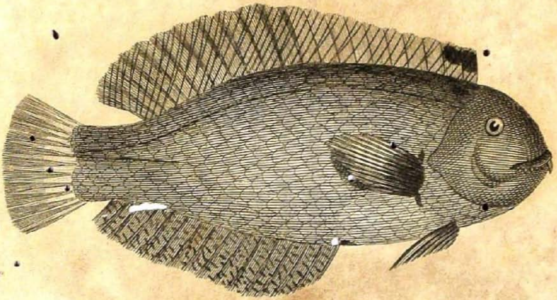
Sparus Hemisphæricus. *S. capite antrorsum hemisphærico, linea laterali duplici, pinnis pectoralibus dorsalique macula nigra.*

Sparus with the head hemispherical in front, double lateral line, and the dorsal and anal fin marked by a black spot.

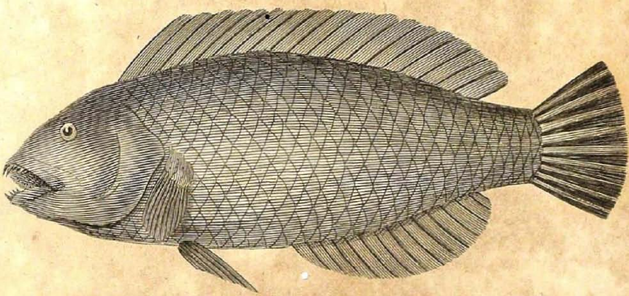
S. Hemisphærium. *Cepede. 4. p. 160.*

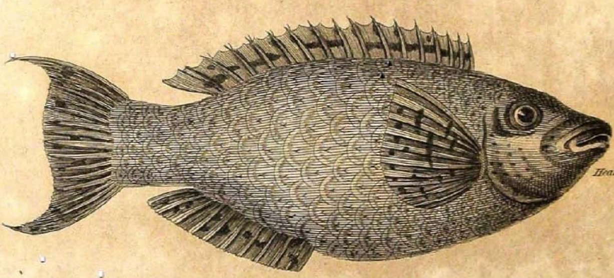
MENTIONED by Cepede from Commerson: front-teeth in the upper jaw longer than the rest: lateral line double: at the base of the pectoral fins a black spot, and another on the fore part of the dorsal. Native of the Indian seas.

HEMISPHERIC SPARUS.



BRACHIATED SPARUS.





Heath sculp.

SPARUS AUREORUBER. *Cepede*

1803. July 1 London Publish'd by G. Kearsley Fleet Street.

ACARA SPARUS.

Sparus Acara. *S. subargenteus, dorso subfusco, macula utrinque humerali & ad basin caudæ.*

Subargenteous Sparus, with brownish back, and a black spot on each side at the shoulders and at the base of the tail.

Sparus Acara. *Cepede.* Perca bimaculata. *Bloch.*

SIZE of a small Perch: habit rather broad or deep: scales of moderate size: teeth rather small, and equal: fins brown. Native of the Brasilian seas, and in esteem as an edible fish.

NOCHUNDA SPARUS.

Sparus Nochunda. *S. argenteus, pinnis flavescentibus, linea laterali nigro-maculata.*

Silvery Sparus, with yellowish fins, and lateral line spotted with black.

Sparus Nochunda. *Cepede.* Perca Brasiliensis. *Bloch.*

SIZE of a gudgeon: shape rather slender: scales rather small than large: lateral line strait and marked from the gill-covers to the tail by seven equidistant, oval, black spots. Native of the Brasilian seas.

PANTHER SPARUS.

Sparus Pantherinus. *S. griseus, capite abdomineque nigro-punctatis.*
Grey Sparus, with the head and abdomen speckled with black.
Spare pantherin. *Cepede.* 4. *p.* 53.

Lower jaw elevated against the upper, and furnished with four large teeth: head, gill-covers, and abdomen freckled with unequal, round, black spots: neck raised and rounded: native of the Indian seas: observed by Commerson.

BRACHIATED SPARE.

Sparus Brachiatus. *S. pinnis ventralibus basi brachiatis.*
Sparus with the ventral fins brachiated at the base.
Spare brachion. *Cepede.* 4. *p.* 160.

Mentioned by Cepede from the MSS. of Commerson, who observed it in the Indian seas: neither size nor colours specified: dorsal and anal fin very broad and long: the anal is also marked by small specks: six very large and flat teeth in front of the upper jaw, and eight in the lower: head and gill-covers without scales.

MEACO SPARUS.

Sparus Meaco. *S. fuscus, fasciis sex transversis albis, macula caudali fusca.*

Brown Sparus, with six transverse white bands, and brown caudal spot.

Sparus Meaco. *Cepede.* Mullus fasciatus. *Thunb. Japan.*

Head compressed: in each jaw two large front-teeth: scales large, oval, and striated: fins spotted with brown. Native of Japan.

DESFONTAINE'S SPARUS.

Sparus Desfontainii. *S. pinna dorsali radiis viginti tribus, anali undecim, macula operculorum nigra.*

Sparus with twenty-three rays in the dorsal fin, eleven in the anal, and a black spot on the gill-covers.

Sparus Desfontainii. *Cepede.* 4. *p.* 161.

Inhabits the warm waters of the town of Cassa in Tunis: these waters, in the month of January, are about thirty degrees of Reaumur's thermometer above the freezing point: they are very pure, and the only waters used for drinking by the inhabitants of Cassa: the fish is also found in the cold and brackish waters surrounding the date-plantations at Tozzar.

NORWEGIAN SPARUS.

Sparus Noryegicus. *S. flavus, dorso violaceo, corpore fusco-maculato.*

Yellow Sparus, with violet-coloured back, and the body spotted with brown.

Lutianus Norvegicus. *Bloch.* 256.

Habit of a Carp, but the head somewhat more oblong: scales rather large for the size of the fish: dorsal fin yellowish with violet clouds: the rest pale violet: at the base of the tail a round dusky spot: eyes blue: orbit radiated by tubular pores: the pavement of grinders is in this species situated so deep as not to be visible in the mouth, being rather seated at the entrance of the stomach.

SURINAM SPARE.

Sparus Surinamensis. *S. subruber, fasciis semidecurrentibus nigris, abdomine subalbente, macula utrinque fusca.*

Reddish Sparus, with black semidecurrent bands, and whitish abdomen with a black spot on each side.

Lutianus Surinamensis. *Bloch. t.* 253.

Size and shape of a Perch: fins dusky: last band on the body rather broader than the rest: upper part of the tail tinged with red: eyes blue: scales middle-sized: dorsal and anal fin scaly at the base: native of Surinam.

TEN-SPINED SPARUS.

Sparus Decacanthus. *S. fusco-flavescens, albo longitudinaliter lineatus, pinna dorsali ramentacea, radiis decem spinosis.*
Yellowish-brown Sparus, with longitudinal white lines, and ramentose dorsal fin with ten spiny rays.
Labrus striatus. *Lin. Gmel.* Lutianus decacanthus. *Cepede.*

Native of the American seas.

SCINA SPARUS.

Sparus Scina. *S. virescens, nebulis albis flavisque, oculis viridibus.*
Greenish Sparus, with white and yellow clouds, and green eyes.
Labrus Scina. *Lin. Gmel. Forsk. Arab.*

Front-teeth very large: pectoral fins yellowish, and not spotted: the rest obscurely yellow, spotted with blue: inhabits the Constantinople sea.

LAPINA SPARUS.

Sparus Lapina. *S. fuscus, subtus albicans, lateribus linea rubro-punctata triplici, pinnis pectoralibus flavis, ventralibus cæruleis, cæteris violaceis.*
Brown Sparus, whitish beneath, with the sides marked by a triple red-spotted line, the pectoral fins yellow, the ventral blue, and the rest violet.
Labrus Lapina. *Lin. Gmel. Forsk. Arab.*

Shape ovate-oblong: head marked on the sides with red spots, and beneath the eyes with blue undulations: inhabits the seas about Constantinople.

RAMENTOSE SPARUS.

Sparus Ramentaceus. *S. fusco-virescens, capite pinnisque violaceo-maculatis, pinnæ dorsalis ramentis spinis longioribus.*
Greenish-brown Sparus, with the head and fins spotted with violet, and the processes of the dorsal fin longer than the spines.
Labrus ramentaceus. *Lin. Gmel.*

Shape rather slender: scales large, and disposed in nine rows on each side: upper lip moveable: four large front-teeth in each jaw: native of the Arabian seas.

OCELLATED SPARUS.

Sparus Ocellatus. *S. virescens, capite cæruleo-undulato, ocello postoculari coccineo.*
Greenish Sparus, with head undulated with blue, and a scarlet-ringed spot behind each eye.
Labrus ocellatus. *Lin. Gmel.*

Shape subovate: on the gill-covers a large oblong blue spot edged with red: tail linear: native of the Arabian seas.

GIBBOUS SPARUS.

Sparus Gibbus. *S. cæruleo aurantioque varius, pinna dorsali analique nigro-maculatis.*
Sparus with blue and orange variegations, and the dorsal and anal fin spotted with black.
Labrus gibbus. *Lin. Gmel.* Gibbous Wrasse. *Penn.*

Described by Mr. Pennant in the British Zoology: shape and size of a Perch, but the back more arched: scales large: dorsal and anal fin sea-green spotted with black: pectoral yellow, crossed with red at the base: ventral and anal large, and of a pea-green colour: native of the British seas.

OLIVACEOUS SPARUS.

Sparus Olivaceus. *S. olivaceo-viridis, subtus argenteus, operculis apice macula cærulea rubro marginata, macula caudali nigra.*
Olive-green Sparus, beneath silvery, with the gill-covers marked at the tip by a blue spot edged with red, and a black spot on each side the tail.
Sparus olivaceus. *Lin. Gmel.*

A very small species: front-teeth sharp: the middle ones remote: fins of the same colour with the body: tail rufous: native of the Mediterranean.

BRUNNICH'S SPARUS.

Sparus Brunnichii. *S. fuscus, lineis maculisque cæruleis.*
Brown Sparus, with blue lines and spots.
Labrus fuscus. *Lin. Gmel.*

A small species of a compressed oblong shape: head sharp: mouth small: teeth sharp: dorsal and anal fin brown, spotted with blue: pectoral rufous with blue tips: ventral red: anal rufous spotted with blue: native of the Mediterranean.

MARSEILLES SPARUS.

Sparus Massiliensis. *S. olivaceus, cæruleo longitudinaliter lineatus, macula nigra versus finem pinnæ dorsalis.*
Olivaceous Sparus, lineated longitudinally with brown, and with a black spot towards the end of the dorsal fin.
Labrus unimaculatus. *Lin. Gmel.*

A small species of about three inches in length: number of blue lines about ten; a variety is mentioned by Brunnich, which is said to be reticulated as it were with dull red and silvery-green: native of the Mediterranean.

ADRIATIC SPARUS.

Sparus Adriaticus. *S. pallidus, fasciis quatuor transversis latis fuscis, pinna dorsali postice nigro-ocellata.*
Pale Sparus, with four broad transverse brown bands, and dorsal fin marked at the back part by an ocellate black spot.
Labrus Adriaticus. *Lin. Gmel.*

A small species, about three inches in length: head marked by oblique fulvous stripes: teeth small: ventral and anal fin black, but the latter tipped with yellow. Native of the Mediterranean.

MAGNIFICENT SPARUS.

Sparus Magnificus. *S. argenteus, fasciis octo transversis fuscis.*
Silvery Sparus, with eight transverse brown bands.
Perca nobilis. *Lin.*

Colour bright silver; banded as expressed in the specific character: spiny rays of the dorsal fin silvery: native of the American seas: extremely allied to the Chætodons.

POLYMNA SPARUS.

Sparus Polymna. *S. niger, fasciis tribus transversis albis.*
Black Sparus, with three transverse white bands.
Perca Polymna. *Lin.* Anthias Polymna. *Bloch. t. 216. f. 1. 3.*

Habit broad: considerably allied to the Chætodons: length about four inches: scales of mode-

rate size: the middle band runs through part of the dorsal fin: native of the American seas. Bloch mentions a variety, with white fins and tail, edged with black.

PALPEBRAL SPARUS.

Sparus Palpebratus. *S. macula palpebrali fusca, linea laterali curva.*
Sparus with a brown spot on the brows, and curved lateral line.
Perca palpebrosa. *Lin. Gmel.*

A SMALL species: native of the American seas.

BLACK SPARUS.

Sparus Atrarius. *S. corpore nigro, pinnis albido-maculatis.*
Black Sparus, with the fins spotted with white.
Perca Atraria. *Lin. Gmel.*

GILL-COVERS denticulated on the fore-part, and ciliated behind: lateral line strait: dorsal fin streaked with white lines.

GOLDEN-FINNED SPARUS.

Sparus Chrysopterus. *S. fuscus, pinnis inferioribus flavis fusco-maculatis.*
Brown Sparus, with the lower fins yellow spotted with brown.
Perca chrysoptera. *Lin. Gmel.* *Catesb. Car. 2. t. 2.*

Back gibbous: upper mandible longer than the lower: ventral, anal, and caudal fins yellow spotted with brown: tail erroneously represented as forked in Catesby's plate.

MEDITERRANEAN SPARUS.

Sparus Mediterraneus. *S. viridis, supra lineam lateralem striis longitudinalibus obscuris, infra cæruleis, pinnis fulvis.*
Green Sparus, marked above the lateral line with longitudinal dusky stripes, below it with blue ones, and with fulvous fins.
Perca Mediterranea. *Lin. Gmel.*

Native of the Mediterranean.

VITTATED SPARUS.

Sparus Vittatus. *S. lineis quinque transversis albis fuscisque.*
Sparus with five transverse equidistant brown and white linear bands.
Perca vittata. *Lin. Gmel.*

Length about eight inches: teeth rather large: native of the American seas.

SCRIBE SPARUS.

Sparus Scriba. *S. griseus, capite scripto, corpore fasciis transversis fuscis, pinnis pectoralibus caudaque flavis.*

Greyish Sparus, with the head marked by letter-shaped characters, the body banded transversely with brown, and the pectoral fins and tail yellow.

Perca Scriba. *Lin. Gmel.*

CHINESE SPARE.

Sparus Sinensis. *S. flavescens, cauda ovali, maxilla inferiore breviore.*

Yellowish Sparus, with even tail, and lower jaw shorter than the upper.

Perca Chinensis. *Lin. Gmel.*

Habit of a common Perch, but smaller: lateral line curved: dorsal fin extending from head to tail. Native of China.

SPEAR SPARUS.

Sparus Hasta. *S. flavescens, lineis longitudinalibus cæruleis, abdomine argenteo, pinnis pectoralibus ventralibus caudaque rubris.*

Yellowish Sparus, with longitudinal blue lines, silvery abdomen, and red pectoral, ventral fins, and tail.

Lutianus Hasta. *Bloch. t.* 246. *f.* 1.

Size and habit of a small Perch: dorsal fin pale, with two blackish stripes: scales of moderate size:

teeth rather small: second ray of the anal fin longer than the rest and very strong and sharp. Native of Japan.

SADDLED SPARUS.

Sparus Ephippium. *S. ruber, nebula magna dorsali nigra.*
Red Sparus, with a large black cloud on the back.
Lutianus Ephippium. *Bloch. t.* 250. *f.* 2.

Length about five inches: habit broad or deep: scales middle sized: fins pale dusky grey: the dorsal and anal somewhat scaled at the base: orbits and plates of the gill-covers marked with striated denticulations: mouth small: teeth nearly equal. Native of the Indian seas.

BIDENT SPARUS.

Sparus Bidens. *S. roseus, abdomine argenteo, pinnis subcæruleis, maxilla superiore dentibus duobus.*
Rose-coloured Sparus, with silvery abdomen, blueish fins, and two teeth in the upper jaw.
Lutianus bidens. *Bloch. t.* 251. *f.* 1.

Length about six inches: shape somewhat lengthened: at the base of the pectoral fin on each side a black spot: eyes yellow: scales rather large: an elegant species: native of the Northern parts of the Atlantic ocean.

MARKED SPARUS.

Sparus Notatus. *S. flavescens fusco maculatus, macula utrinque nigra ad basin caudæ.*

Yellowish Sparus, spotted with brown, and with a black spot on each side the base of the tail.

Lutianus notatus. *Bloch. t.* 251. *f.* 2.

Length about five inches: scales of moderate size: orbit surrounded with tubular pores: dorsal and caudal fin striped with brown: native of the Indian seas.

LINKIAN SPARUS.

Sparus Linkii. *S. violaceus, abdomine subargenteo, rostro subelongato, pinnis pectoralibus rotundatis.*

Violaceous Sparus, with subargenteous abdomen, subelongated snout, and rounded pectoral fins.

Lutianus Linkii. *Bloch. t.* 252.

Length near a foot: scales rather large: eyes blue: lips doubled: teeth small: fins pale. Native region unknown: described by Bloch from the Linkian collection.

GREENISH-FINNED SPARUS.

Sparus Virescens. *S. subflavus, lineis longitudinalibus fuscis, pinnis virescentibus, dorsali ramentacea.*

Yellowish Sparus, with longitudinal brown lines and greenish fins, the dorsal ramentose.

Lutianus virescens. *Bloch. t.* 254.

LENGTH about eight inches: lips doubled: teeth small: fins streaked with brown: scales middle-sized: habit, as in many others of this genus, resembling that of the Labri.

LONG-HEADED SPARUS.

Sparus Rostratus. *S. subviolaceo-flavescens, capite producto, linea laterali duplici, pinna dorsali ramentacea.*

Violaceo-flavescent Sparus, with lengthened head, double lateral line, and ramentose dorsal fin.

Lutianus rostratus. *Bloch. t.* 254. *f.* 2.

A SMALL species, scarce five inches in length: scales rather large than small: the second or lower lateral line is rather a dusky streak than a proper *linea lateralis*: eyes blue: native region unknown.

BIFASCIATED SPARUS.

Sparus Bifasciatus. *S. fuscus, fasciis duabus albis transversis, cauda utrinque alba.*

Brown Sparus, with two white transverse bands, and the tail white on each side.

Anthias bifasciatus. *Bloch.*

A SMALL species, with the habit of a Chætodon, and allied to the *Polymna*: scales small: the second band runs through the hind-part of the dorsal fin. Native of the Indian seas, and found about the coasts of Amboina.

ARGUS SPARUS.

Sparus Argus. *S. argenteo-cærulescens, maculis numerosis, ocellaribus, fuscis.*

Silvery-blueish Anthias, with numerous ocellated brown spots.

Anthias Argus. *Bloch. t.* 317.

A MOST elegant species: length about a foot: colour silvery white, tinged with fine blue on the upper parts, and marked all over with pretty numerous annular spots of brown. Native country uncertain: figured by Bloch from a specimen in the Linkian collection at Leipzic.

TRANQUEBAR SPARUS.

Sparus Tranquebaricus. *S. griseo-flavescens, dorso fasciis transversis semidecurrentibus fuscis, pinnis rubris.*
Yellowish-grey Sparus, with the back marked by transverse semidecurrent bands, and red fins.
Anthias Johnii. *Bloch. t.* 318.

Habit of the Gilthead Spare, but somewhat less deep: back marked by dusky longitudinal lines: scales middle-sized: fins red, except the fore-part of the dorsal, which is pale. Native of Tranquebar: communicated to Bloch by a Mr. John, a missionary in that country.

TORTOISE-SHELL SPARUS.

Sparus Testudineus. *S. fusco-flavescens, squamis magnis, oculis cæruleis.*
Yellowish-brown Sparus, with large scales, and blue eyes.
Anthias testudineus. *Bloch. t.* 322.

Habit of a Carp: colour brown, with a strong suffusion of pale yellow on the sides and head: scales paler on the margin than on the middle: mouth moderate: teeth small: dorsal and anal fin pale at the fore-part and black at the hind-part, rest of the fins brown. Native of the Indian seas.

SEMIFASCIATED SPARUS.

Sparus Semifasciatus. *S. fulvus, fasciis semidecurrentibus subnigris, imo dorso macula rotundata nigerrima, pinnis rubris.*
Fulvous Sparus, with semidecurrent blackish bands, a deep-black round spot at the bottom of the back, and red fins.
Anthias Striatus. *Bloch. t.* 324.

Size and shape of a Carp: scales small: teeth rather small, and equal: eyes yellow: native of the American seas.

TRILINEATED SPARUS.

Sparus Trilineatus. *S. subflavus corpore utrinque lineis tribus longitudinalibus maculatis fuscis, pinna dorsali nigro-maculata.*
Yellowish Sparus, with the body marked on each side by three longitudinal spotted brown lines, and dorsal fin spotted with black.
Anthias lineatus. *Bloch. t.* 326. *f.* 1.

A small species, a few inches in length, with the habit of a Perch: scales middle-sized: fins tinged with red. Native of the Indian seas.

PATCHED SPARUS.

Sparus Maculatus. *S. griseo-flavescens, supra nigro-varius.*
Yellowish grey Sparus, variegated above with black.
Anthias maculatus. *Bloch. t.* 326.

Length about five inches: habit of a Perch: scales middle-sized: dorsal fin reddish at the tip: back crossed by two or three blackish bands and varied by several irregular spots. Native of the Indian seas.

ORIENTAL SPARUS.

Sparus Orientalis. *S. fulvus, nigro-fusco varius.*
Fulvous Sparus, variegated with blackish-brown.
Anthias Orientalis. *Bloch. t.* 326. *f.* 3.

A small species about four inches in length: head and fore-parts rather deep: mouth small: scales middle-sized: dorsal, anal fin, and tail varied with brown: eyes rather large: native of Japan.

CEPEDIAN SPARUS.

Sparus Cepedianus. *S. albus, lineis utrinque longitudinalibus flavis, cauda nigra albo-marginata.*
White Sparus, with longitudinal yellow lines on each side, and black tail bordered with white.
Lutian Blancor. *Cepede.* 4. *p.* 240.

Size rather small: native of the Indian seas: described by Cepede from Commerson.

PERCULINE SPARUS.

Sparus Percula. *S. aurantius, fasciis utrinque tribus transversis subcæruleis nigro-marginatis.*

Orange-coloured Sparus, marked on each side by three transverse blueish bands bordered with black.

Lutian Perchot. *Cepede.* 4. *p.* 240.

A VERY small species, observed by Commerson in the Indian seas: fins yellow, except the tail, which is coloured as mentioned in the specific character: scales of a lengthened shape near the ventral fins.

SEALED SPARUS.

Sparus Sigillatus. *S. ruber, fascia utrinque longitudinali pallidiore, ellipsi utrinque postoculari rubro-flava.*

Red Sparus, marked on each side by a longitudinal paler stripe, and a yellow-red ellipse behind each eye.

Lutian jaune-ellipse. *Cepede.* 4. *p.* 241.

SIZE nearly that of a Perch: near each eye an elliptic spot, red on the outside and yellow on the inside: dorsal and anal fin bright-red: pectoral and ventral pale-red: tail varied with brown, and on the hind part of the dorsal fin are a few blackish spots: beneath the throat a black line: on the gill-covers four or five deep-red spots: front-teeth rather small, standing separate, and behind them others of a smaller size. Observed by Commerson in the Indian seas.

CLIMBING SPARUS.

Sparus Scandens. *S. olivaceus, subtus flavescens, oculis aureis.*
Olive-green Sparus, with yellowish abdomen, and gold-coloured eyes.
Perca scandens. *Lin. Trans.* 3. *p.* 62.

LENGTH about a span: skin covered by a blackish mucus: dorsal fin occasionally sunk in a longitudinal fossule: it has seventeen spiny, and eight soft rays: the pectoral fins have twelve rays: the ventral six, the tail eighteen, of which ten are spiny, the rest soft.

This fish is remarkable for its power of climbing, which it performs by the assistance of the spines of its gill-covers, moving itself at pleasure up the stems of trees growing near the waters it frequents. In this situation it was observed in the month of November 1791 at Tranquebar, by Lieutenant Daldorff, who communicated its description to Sir Joseph Banks. It was seen ascending a fissure in the stem of the palm called *Borassus flabellifer*, growing near a pool of water, and was observed to move itself forwards by alternately applying the spiny sides of the gill-covers to the sides of the fissure, assisting itself at the same time by the spines on each side the tail, and had already ascended to the height of more than five feet above the water when it was first observed: it was found to be very tenacious of life, moving about on dry sand, many hours after it was taken. The spines of the gill-covers are considered by the natives as of a poisonous nature.

CHÆTODONTOID SPARUS.

Sparus Chætodontoides. *S. . . . . , maculis magnis albis fusco-punctatis, labiis extensilibus carnosis.*

. . . . . Sparus, with large white spots speckled with brown, and with extensile, fleshy lips.

Lutian chætodonoide. *Cepede. 4. p. 290.*

This species, says Cepede, exhibits on its whole surface large white patches marked either by one or more small dark spots, and is described from an individual in the National Museum of France.

This fish seems in some degree allied to the Chætodon plectorynchus, before described by the same author.

TWO-SPINED SPARUS.

Sparus Diacanthus. *S. . . . . . . , corpore pinnisque fusco-punctulatis pinna anali biaculeata.*

. . . . . Sparus, freckled on the body and fins with dusky specks; the caudal fin biaculeated.

Lutian diacanthe. *Cepede. 4. p. 240.*

Described by Cepede from a dried specimen in the Prince of Orange's museum: teeth rather large, curved, and distant; with smaller behind: dorsal fin with eleven spiny and twenty-two soft rays: anal with two spiny and seven soft: pectoral with nineteen rays: ventral with one spiny and five soft: tail with eighteen rays.

CAYENNE SPARUS.

Sparus Cayanensis.

Lutian Cayenne. *Cepede.* 4. *p.* 196.

No mention is made of the size or colour of this fish by the Count de Cepede: in the dorsal fin are eleven spiny and nineteen soft rays: in the ventral one spiny and five soft: in the anal two spiny and seven soft: teeth equal and close: lower jaw rather longer than the upper. Native of Cayenne.

TRIDENT SPARE.

Sparus Tridens. *S. griseus, fasciis septem transversis cæruleis, cauda trifida.*

Greyish Sparus, with seven transverse blue bands, and trifid tail.

Lutianus tridens. *Cepede.* 4. *p.* 246. Perca trifurca. *Lin. Gmel.*

Native of the American seas: head beautifully variegated: third and fourth rays of the dorsal fin spiny, and lengthened by a setaceous filament.

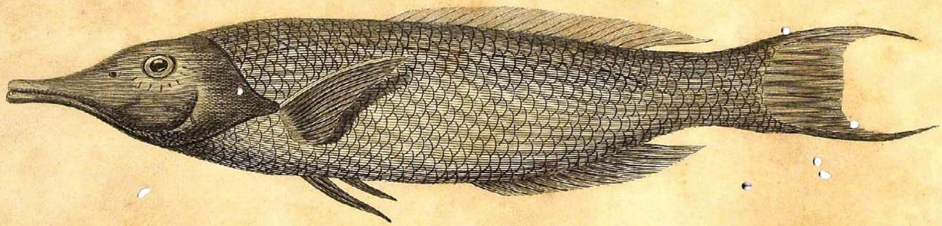
TRILOBATE SPARE.

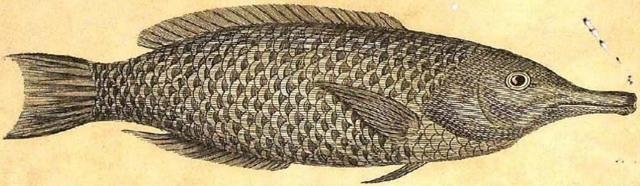
Sparus Trilobatus. *S. operculis elongatis, cauda triloba.*
Sparus with elongated gill-covers, and trilobate tail.
Spare trilobé. *Cepede. 4. p. 196.*

Teeth small and equal: neck rising: lateral line imperceptible: dorsal fin marked by several unequal and irregular streaks situated between the rays: native country unknown: described by Cepede from a specimen in the Paris Museum.

A general apology must here be made for any inaccuracies which in a tribe so numerous as the present may occasionally have crept into the descriptions; and it is by no means improbable that some of these fishes may in reality be rather varieties than species truly distinct. Some of those observed by Commerson, and described by the Count de Cepede seem scarcely distinguished with sufficient accuracy, and indeed the specific characters in general, though composed with every possible attention to precision, must be regarded with a proper degree of indulgence. It is necessary to observe that in the present arrangement are included the genera of *Lutianus* and *Anthias*, as well as some of the Blochian Labri.

BLUE GOMPHOSUS.





Heath sculp.

VARIEGATED GOMPHOSUS.

1803 July 1. London Published by G. Kearsley Fleet Street.

GOMPHOSUS. GOMPHOSUS.

Generic Character.

Maxillæ productæ in rostrum truncatum.	*Jaws* lengthened into a tubular snout.
Dentes minuti, anterioribus majoribus.	*Teeth* small: those in front larger.

THE genus Gomphosus instituted by the Count de Cepede, from the MSS. of Commerson, contains two species, both natives of the Indian seas, and both agreeing in the remarkable form of the mouth, which consists of a tubular process, somewhat truncated at the tip.

BLUE GOMPHOSUS.

Gomphosus Cæruleus. *G. totus cæruleus.*
Gomphosus entirely of a blue colour.
Le Gomphose bleu. *Cepede.* 3. *p.* 101.

THIS species is about the size of a tench, and entirely of a deep blue, with a blackish cast on the pectoral fins: the body is slightly arched above, and much more so beneath: the head is of moderate size, and is terminated by a lengthened snout, equal to about one seventh of the whole animal, and which bears some resemblance to that of a

bear: the upper jaw is somewhat extensile, and rather longer than the lower: each jaw is composed of a bone furnished with a single row of very small and close-set teeth, and the two front teeth in the upper jaw are larger than the rest: the inside of the mouth is smooth and blue: the head and gill-covers are plain: the rest of the body covered with large scales: the fins are of moderate size, and the tail crescent-shaped: the lateral line follows the flexure of the back as far as the dorsal fin, and from thence bending downwards runs strait to the tail: throughout its whole course it is marked with small streaks resembling Chinese characters. Native of the Indian seas.

VARIEGATED GOMPHOSUS.

Gomphosus Variegatus. *G. rubro flavo cæruleoque varius.*
Gomphose variegated with red, yellow, and blue.
Le Gomphose varié. *Cepede.* 3. *p.* 104.

This, which is smaller than the former, was observed by Commerson about the coasts of Otaheitee, and is a very beautiful fish, exhibiting an elegant mixture of red, yellow, and blue, in which the yellow predominates, though the blue is sufficient to shew its alliance to the preceding species.

Generic Character.

Dentes robusti, subacuti: molares interdum, ut in Sparis, conferti, convexi: *labia* crassa, duplicata: *pinnæ dorsalis* radii in certis speciebus ramento elongati.
Opercula mutica, squamosa.

Teeth strong and subacute: the grinders sometimes, as in the Spari, convex and crouded: *lips* thick and doubled: rays of the *dorsal fin*, in some species, elongated into soft processes.
Gill-covers unarmed and scaly.

With divided or forked tail.

HEPAT LABRUS.

Labrus Hepatus. *L. rufescens, lineis transversis nigris, maxilla inferiore longiore, pinna dorsali macula nigra.*
Rufescent Labrus, with transverse black lines, lower jaw longer than the upper, and dorsal fin marked by a black spot.
Labrus Hepatus. *Lin.*

SNOUT rather pointed: teeth small: palate furnished with a rough bone. Native of the Mediterranean, sometimes wandering into rivers.

EARED LABRUS.

Labrus Auritus. *L. griseus, subtus luteus, operculis pinniformibus fusco-striatis, macula rubro-nigra terminatis.*
Grey Labrus, yellow beneath, with pinniform gill-covers marked by a black-and-red spot.
Labrus auritus. *Lin.*

Size and habit of a small Perch: gill-covers produced at the back part into a membranaceous tip: native of the Indian and American seas.

OYENA LABRUS.

Labrus Oyena. *L. oblongus argenteus (interdum rubro interrupte vittatus) squamis latis, pinnis glaucis.*
Oblong silvery Labrus (sometimes marked by interrupted red bands), with broad scales, and glaucous fins.
Labrus Oyena. *Lin. Gmel.*

Length about six inches: teeth small and numerous: lips protractile: scales striated: native of the Arabian seas.

FALCATED LABRUS.

Labrus Falcatus. *L. argenteus, pinna dorsali analique falcatis.*
Silvery Labrus, with falcated dorsal and anal fin.
Labrus falcatus. *Lin. Gmel.*

Habit of a Carp, or rather of a Bream: the five first soft rays both of the dorsal and anal fin elongated, giving those fins a falcated appearance: the spiny rays of the dorsal fin seven in number: teeth small and sharp: native of the American seas.

OPERCULATED LABRUS.

Labrus Operculatus. *L. griseus, fasciis decem transversis maculaque operculari fuscis.*

Grey Labrus, with ten brown dusky transverse bands and spot on the gill-covers.

Labrus Operculatus. *Lin. Gmel.*

In the dorsal fin are thirteen spiny and seven soft rays: native of the Indian seas.

CEYLONESE LABRUS.

Labrus Zeylanicus. *L. viridis, subtus purpurascens, capite cæruleo, operculis purpureo-variis.*

Green Labrus, purplish beneath, with blue head, and gill-covers variegated with purple.

Zeylon Wrasse. *Pennant Ind. Zool. t.* 13. *f.* 3.

A beautiful species: length about eighteen inches: pectoral fins edged with blue, and marked in the middle by a purple spot: ventral fins blue: dorsal and anal blueish purple, with green edges: tail blue at the base, yellow in the middle, and striped on each side with red: native of Ceylon, where it is numbered among esculent fish.

RUFOUS LABRUS.

Labrus Rufus. *L. totus fulvus, squamis magnis, labiis duplicatis, cauda lunata.*

Fulvous Labrus, with large scales, doubled lips, and lunated tail.

Labrus rufus. *Lin. Gmel.* Hog-Fish. *Catesb.* 2. *t.* 11. *f.* 1.

Grows to the length of about two feet: front teeth both above and below considerably larger than the rest, and sharp-pointed: colour of the whole fish rufous or orange-tawny. Native of the American seas.

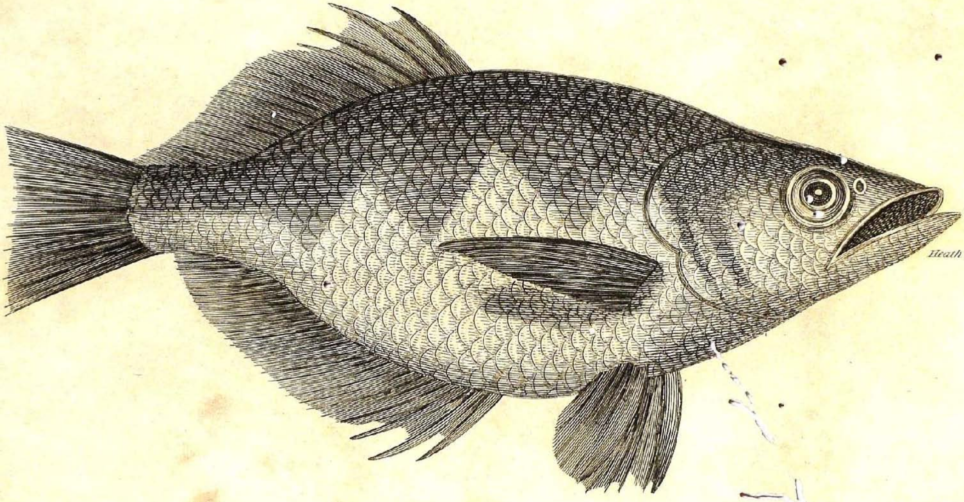
GREY LABRUS.

Labrus Griseus. *L. fusco-griseus, squamis magnis, dentibus primoribus majoribus, cauda lunata.*

Brownish-grey Labrus, with large scales, front teeth larger than the rest, and lunated tail.

Labrus griseus. *Lin. Gmel. p.* 1283.

Length about fifteen inches: colour subferruginous or brownish grey: in each jaw two pretty strong and sharp-pointed front teeth: irides red: native of the American seas, and according to Catesby esteemed a pretty good food. Catesby, who has figured it under the name of the Mangrove Snapper, has (probably through oversight) represented it without pectoral fins.



Heath sculp.

JACULATOR LABRUS.

1803 July 1. London Published by G. Kearsley Fleet Street.

JACULATOR LABRUS.

Labrus Jaculator. *L. griseus flavo nebulosus, fasciis quinque transversis fuscis, maxilla inferiore longiore.*

Grey Labrus, clouded with yellow, with five transverse dusky bands, and lower jaw longer than the upper.

Labrus jaculatrix. *Phil. Trans. vol. 56. p. 187.*

Sciæna jaculatrix. *Lin. Gmel.*

Size of a Roach: mouth wide: scales middle-sized: first spines of the dorsal, anal, and ventral fin very strong: eyes rather large: nostrils placed pretty near the eyes: native of the Indian seas, preying on insects in the same manner as the *Chætodon Jaculator*.

LUNAR LABRUS.

Labrus Lunaris. *L. griseus violaceo tinctus, labiis plicatis, pinna caudali medio truncata, dorsali analique linea purpurea.*

Grey Labrus, tinged with violet, with plaited lips, caudal fin truncated in the middle, and dorsal and anal fin marked by a purple line.

Labrus lunaris. *Lin. Gmel.*

Native of the American and Indian seas.

LONG-SNOUTED LABRUS.

Labrus Longirostris. *L. griseus, lineis longitudinalibus striisque maculatis fuscis, rostro elongato.*
Grey Labrus, with brown longitudinal lines, spotted streaks, and elongated snout.
Labre long-museau. *Cepede. 3. p. 427.*

Mentioned by Cepede from Commerson: native of the Indian seas.

HOOPED LABRUS.

Labrus Doliatus. *L. griseus, fasciis viginti-tribus transversis fuscis.*
Grey Labrus, with twenty-three transverse brown bands.
Labre cerclé. *Cep. 3. p. 429.*

Mentioned by Cepede from Commerson: native of the Indian seas.

HIRSUTE LABRUS.

Labrus Hirsutus. *L. linea laterali spinosa.*
Labrus with lateral line roughened by spines.
Labre herissé. *Cepede.*

Native of the Indian seas: observed by Commerson.

HALF-RED LABRUS.

Labrus Semiruber. *L. antice ruber, postice flavus.*
Red Labrus, with the hind part yellow.
Demi-rouge. *Cepede.*

Mouth furnished with four teeth larger than the rest in the upper jaw: the sixteenth soft ray of the dorsal fin longer than the rest: dorsal and anal fin scaly at the base: native of the Indian and American seas: observed by Commerson.

TRILOBATE LABRUS.

Labrus Trilobatus. *L. lividus, capite maculato, cauda triloba, basi squamosa.*
Livid Labrus, with spotted head, and trilobate tail scaly at the base.
Cheiline trilobé. *Cepede.*

Size of a Carp: general colour blueish brown, the head and gill-covers marked with red and yellow specks: pectoral fins yellow: ventral varied with red: tail furnished on each side with three or four nearly membranaceous appendages composed of a kind of lengthened floating scales: native of the African seas: observed by Commerson.

SCARE LABRUS.

Labrus Scarus. *L. albidus rubro mixtus, appendicibus transversis ad caudæ latera.*

Whitish Labrus mixed with red, with transverse appendages on each side the tail.

Labrus Scarus. *Lin. Gmel.* Cheiline Scare. *Cepede.*

Length about twelve inches: scales large and thin: front teeth broad and blunt, resembling in some degree those of quadrupeds: native of the Mediterranean, swimming in shoals, and feeding principally on various kinds of fuci; in high esteem with the ancients as a food, and considered by the Romans as one of the principal delicacies of the table.

CHAIN LABRUS.

Labrus Catenula. *L. albidus, capite fasciis duabus transversis nigris, corpore lineis utrinque octo fusco-maculatis.*

Whitish Labrus, with two black transverse bands on the head, and eight brown-spotted bands on each side the body.

L. Chapelet. *Cepede.*

Colour pale; in the upper jaw six large teeth: on the head two black transverse bands, and along each side the body eight rows of small dusky spots: back considerably arched. Native region uncertain: described by Cepede.

BLACK-BELLIED LABRUS.

Labrus Melagaster. *L. rufescens, pectore abdomine pinnisque nigricantibus.*
Rufescent Labrus, with the breast, abdomen, and fins black.
Labrus melagaster. *Bloch. t.* 296.

Length about eight inches: scales large: pectoral and ventral fins lanceolate: dorsal ramentose on the fore part: mouth and teeth small: eyes yellow: native of the American seas.

BIFASCIATED LABRUS.

Labrus Bifasciatus. *L. glaucus, capite rufo, corpore antice fasciis duabus transversis fuscis, cauda fusco arcuata.*
Glaucous Labrus, with rufous head, body marked by two transverse brown bands, and tail by a brown crescent.
Labrus bifasciatus. *Bloch. t.* 383.

Length about ten inches: shape elegant: scales large: dorsal and anal fin tinged with pale red: tail deeply lunated. Native of the Indian seas.

FOUR-SPINED LABRUS.

Labrus albidus, *corpore utrinque macularum subrotundarum fuscarum seriebus quatuor.*

Whitish Labrus, marked on each side with four rows of roundish brown spots.

Le tetracanthe. *Cepede.*

SIZE not mentioned: tail freckled with black points: dorsal fin furnished with four spiny and twenty-one soft rays: native of the Indian seas? mentioned by Cepede.

DEMIDISC LABRUS.

Labrus Semidiscus. *L. pallidus, fasciis novendecim transversis nigris, cauda lunula terminali pallida.*

Pale Labrus, with nineteen transverse black bands, and tail marked by a pale terminal crescent.

Le demidisque. *Cepede.*

MENTIONED by Cepede from Commerson: native of the Indian seas.

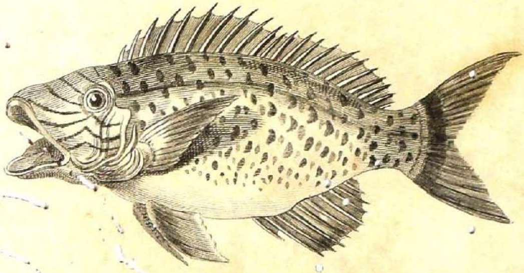
FORKED LABRUS.

Labrus Furcatus. *L. maxilla inferiore longiore, radio ultimo pinnæ dorsalis analisque elongato, cauda longa forficata.*

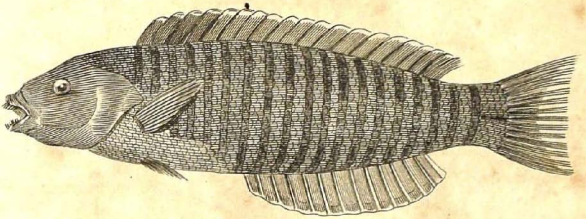
Labrus with the lower jaw longer than the upper, the last ray of the dorsal and anal fin elongated, and long forked tail.

L. fourché. *Cepede.*

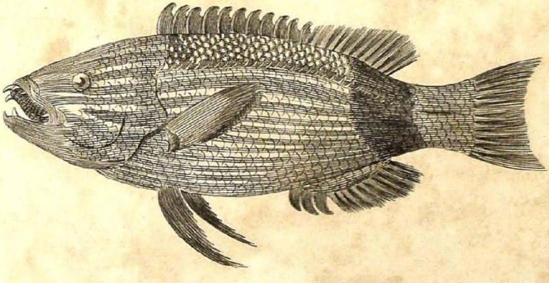
NATIVE of the Indian seas: observed by Commerson.



PLUMIER'S LABRUS.



DEMIDISC LABRUS.



Hill scu

HIRSUTE LABRUS.

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SIX-BANDED LABRUS.

Labrus Sexfasciatus. *L. ore parvo, corpore fasciis sex transversis fuscis, cauda furcata.*

Labrus with small mouth, body marked by six transverse bands, and forked tail.

L. six-bandes. *Cepede.*

Snout lengthened: mouth small: lower jaw longer than the upper: six transverse bands across the body: native of the Indian seas: observed by Commerson.

BELLIED LABRUS.

Labrus Macrogaster. *L. corpore fasciis sex transversis, abdomine descendente, cauda furcata.*

L. with six transverse bands on the body, descending abdomen, and forked tail.

L. macrogastere. *Cepede.*

Native of the Indian seas: observed by Commerson.

FILAMENTOUS LABRUS.

Labrus Filamentosus. *L. dorso fasciis quinque transversis, pinnæ dorsalis radiis quindecim spinosis ramentaceis.*

Labrus with five transverse dorsal bands, and fifteen spiny rays of the dorsal fin ramentose.

L. filamenteux. *Cepede.*

Native of the Indian seas: observed by Com merson.

ANGULAR LABRUS.

Labrus . . . . , *corpore utrinque lineis fusco-punctatis, operculis angulosis, labiis tumidis, pinna dorsali postice dilatata.*

. . . . Labrus, marked on each side by brown-spotted lines, with tumid lips, angular gill-covers, and dorsal fin dilated behind.

L. anguleux. *Cepede.*

NATIVE of the Indian seas: observed by Commerson.

EIGHT-STRIPED LABRUS.

Labrus Octo-vittatus. *L. corpore fasciis utrinque quatuor subobliquis fuscis, dentibus superioribus majoribus.*

Labrus with the body marked on each side by five suboblique brown bands, and the upper teeth largest.

L. Huit-raies. *Cepede.*

NATIVE of the Indian seas: observed by Commerson.

PUNCTULATED LABRUS.

Labrus Punctulatus. *L. . . . . . , undique fusco punctulatus, ore magno, dentibus elongatis, maxilla inferiore longiore.*

. . . . Labrus, spotted on all parts with brown points, with wide mouth, elongated teeth, and lower jaw longer than the upper.

L. moucheté. *Cepede.*

NATIVE of the Indian seas: observed by Commerson.

COMMERSONIAN LABRUS.

Labrus . . . . . , *supra fusco-punctatus, dentibus fere æqualibus.*
. . . . . Labrus, spotted above with brown, and with nearly equal teeth.
L. Commersonien. *Cepede.*

Upper parts marked with small round equal-sized black spots: teeth of both jaws nearly equal: in the dorsal fin nine spiny and sixteen soft rays: in the anal one spiny and seventeen soft: native of the Indian seas: observed by Commerson.

SMOOTH LABRUS.

Labrus Lævis. *L. squamis minimis, dentibus magnis curvis, maxilla inferiore longiore.*
Labrus with very small scales, large curved teeth, and lower jaw longer than the upper.
L. lisse. *Cepede.*

Body covered with scales so small as to be very difficultly distinguished: lower jaw longer than the upper: teeth large, crooked, and of equal size: tail slightly lunated. Native of the Indian seas: observed by Commerson.

LARGE-FINNED LABRUS.

Labrus Macropterus. *L. . . . . , pinna dorsali analique magni, ramentaceis.*

Labrus with large, ramentaceous dorsal and anal fin.

L. macroptere. *Cepede.*

Tail slightly lunated: behind the gill-covers, on each side, a round black spot. Native of the Indian seas: observed by Commerson.

FIFTEEN-SPINED LABRUS.

Labrus Quindecim-aculeatus. *L. . . . . . , corpore supra fasciis sex transversis fuscis, pinna dorsali radiis quindecim aculeatis.*

Labrus marked above by six transverse brown bands, and with fifteen spiny rays in the dorsal fin.

L. Quinze-epines. *Cepede.*

Upper jaw longer than the lower: teeth small and equal: six transverse bands over the neck and back.

GREAT-HEADED LABRUS.

Labrus Macrocephalus. *L. capite grandi, dentibus distinctis, pinnis pectoralibus trapeziformibus.*

Labrus with large head, distinct teeth, and trapeziform pectoral fins.

Le Macrocephale. *Cepede. 3. p. 432.*

Head large and greatly arched upwards from the mouth into the curvature of the back: lower

jaw rather longer than the upper: teeth curved, equal, and distant: pectoral fins trapeziform: native of the Indian seas: observed by Commerson.

PLUMIER'S LABRUS.

Labrus Plumieri. *L. cæruleo luteoque maculatus, pinnis luteis.*
Labrus spotted with blue and yellow, with yellow fins.
L. Plumerien. *Cepede.* 3. *p.* 432.

Mentioned by Cepede from a drawing by Plumier: native of the American seas.

GOUAN'S LABRUS.

Labrus Gouanii. *L. . . . . , linea laterali inconspicua, appendice thoracica subacuta.*
. . . . . Labrus, with inconspicuous lateral line, and subacute thoracic appendage.
L. Gouan. *Cepede.* 3. *p.* 433.

NINE-SPINED LABRUS.

Labrus Enneacanthus. *L. . . . . . , squamis magnis, corpore fasciis sex transversis, cauda duabus.*
. . . . . Labrus, with large scales, six transverse bands on the body, and two on the tail.
L. enneacanthe. *Cepede.*

In front of each jaw four large curved teeth: lateral line interrupted: nine sharp, and ten soft

rays in the dorsal fin: native region unknown: mentioned by Cepede from a specimen in the Prince of Orange's collection.

RED-LINED LABRUS.

L. *subfuscus, lineis utrinque duodecim longitudinalibus rubris, macula ocellata in pinna dorsali.*

Brownish Labrus, with twelve longitudinal red lines on each side, and an ocellate spot on the dorsal fin.

L. rouge-raies. *Cepede.*

BROAD-STRIPED LABRUS.

Labrus Latovittatus. *L. subfuscus? vitta utrinque longitudinali lata.*

Brownish? Labrus, marked on each side by a broad longitudinal stripe.

L. large-raie. *Cepede.*

Native of the Indian seas: observed by Commerson.

UNDULATED LABRUS.

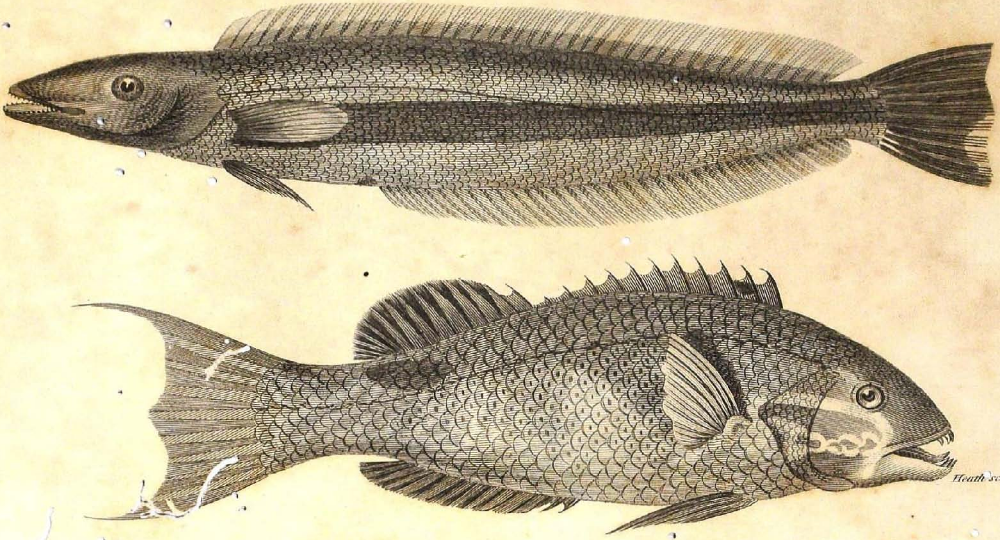
Labrus Undulatus. *L. viridis, lineis flavescentibus transversim undulatus, abdomine capiteque flavis viridi-striatis.*

Green Labrus undulated with transverse yellow lines, with the head and abdomen yellow striped with green.

Labrus viridis. *Bloch. t.* 282.

Length about twelve inches: habit rather slender: colour deep green, scales large, and edged

BROAD-STRIPED LABRUS.



Heath sculp.

LABRE DEUX-CROISSANT *Cepede*.

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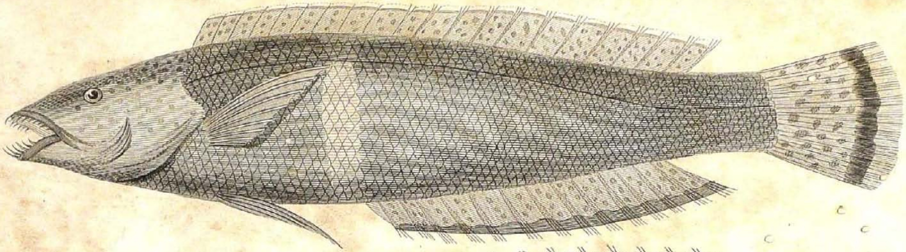
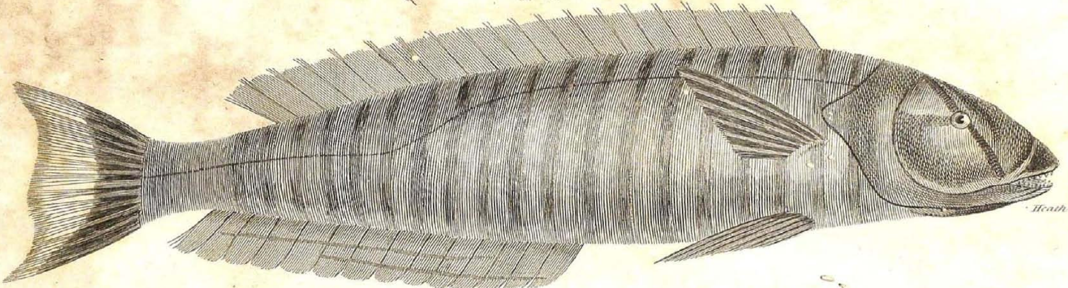
LABRE CEINTURE. *Cepede*





Heath sculp.

ANNULATED LABRUS.

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with yellow; so as to form numerous obliquely transverse undulations over the whole body: head pale yellow, and marked on each side by green stripes, one or two of which are continued down the fore part of the abdomen: dorsal and anal fin yellow, edged with green: tail obscurely trilobate, with long forks. Native of Japan.

ANNULATED LABRUS.

Labrus Annulatus. *L. . . . . . , squamis minutis, fasciis utrinque novendecim fuscis, cauda subtriloba.*

. . . . . Labrus, with minute scales, subtrilobate tail, and body surrounded by nineteen dusky bands.

L. annelé. *Cepede.*

Native of the Indian seas: observed by Commerson.

BRASILIAN LABRUS.

Labrus Brasiliensis. *L. flavus, dorso lunulis cæruleis, pinna dorsali analique cæruleo striatis.*

Yellow Labrus, with the back marked by blue crescents, and the dorsal and anal fin with blue stripes,

Labrus Brasiliensis. *Bloch. t.* 280.

Length about twelve inches: habit that of a tench: colour beautiful yellow, the scales on the back being edged with blue, thus giving the appearance of numerous blue crescents on that part: pectoral, ventral fins, and tail blue: the latter

slightly trilobate: dorsal and anal fin yellow, with two blue stripes across the whole length of each: native of Brasil.

With strait or rounded tails.

PEACOCK LABRUS.

Labrus Pavo. *L. viridi, cæruleo, rubro, flavoque varius.*
Labrus variegated with green, blue, red, and yellow.
Labrus Pavo. *Lin. Gmel.* Pavo. *Salvian.* Turdus perbella dictus. *Will. p.* 322. *t.* X. 3.

LENGTH about twelve inches: body and tail green mixed with yellow, and beset, as well as the gill-covers, with red and blue spots: a large brown spot near each pectoral fin, and a similar one on each side the tail. Native of the Mediterranean, as well as of the Indian seas.

BALLAN LABRUS.

Labrus Ballanus. *L. flavus, fulvo-maculatus, labiis reflexis, pinna dorsali ramentacea.*
Yellow Labrus, with fulvous spots, reflex lips, and ramentose dorsal fin.
Ballan Wrasse. *Penn. Brit. Zool.*

THE weight of this species, according to Mr. Pennant, is about five pounds: form rather broad: between the dorsal fin and tail a considerable depression: above the nose a deep furrow; and on

STRIPED LABRUS.

BALLAN LABRUS.

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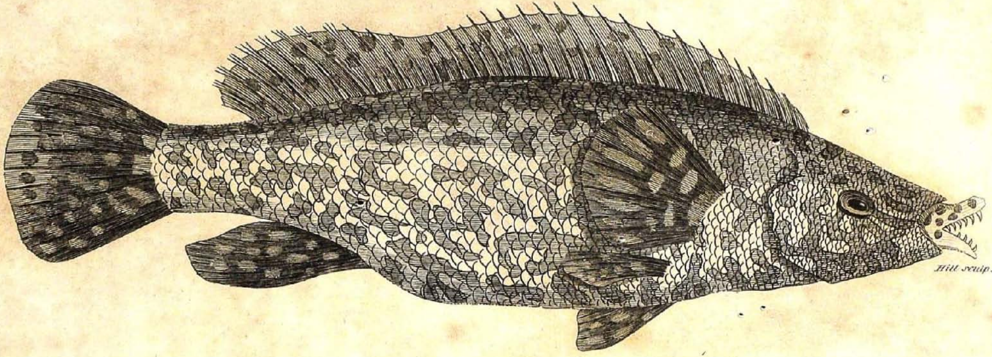

ANCIENT LABRUS. *variety?*

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the gill-covers a radiated depression: the dorsal fin has twenty spiny, and ten soft rays: the pectoral fourteen rays: the ventral six, of which the first is short and spiny: the anal twelve, of which the three first are spiny: the tail is marked between each ray with a row of scales reaching about a third part of the tail: the general colour of the fish is yellow, spotted and marked with orange. This species, according to Mr. Pennant, appears annually in great shoals off Filey bridge near Scarborough.

ANCIENT LABRUS.

Labrus Tinca. *L. rubens (sæpe cæruleo, rubro, flavoque varius), pinna dorsali ramentacea, labiis reflexis.*

Reddish Labrus (often varied with blue, red, and yellow), with ramentaceous dorsal fin, and reflex lips.

Labrus Tinca. *Lin.* Turdus vulgatissimus. *Will. p.* 319.

Ancient Wrasse. *Penn. Brit. Zool.*

SIZE and habit of a Carp or rather of a Tench: scales large: nose prominent: lips large, doubled, fleshy, reflex, and retractile: eyes red: teeth disposed in two rows, the first being conic, the second very minute, and as if designed for supporters to the rest: in the throat three tuberculated bones, two above, and one below: these serve to comminute the testaceous food on which the animal chiefly lives: general colour red, more or less tinged either with orange or brown, but sometimes elegantly varied with blue, red, and yellow: pectoral fins large and rounded: native of the European seas, and usually found in deep waters about rocky coasts.

VAR. ?

The variety described in the eleventh volume of the Naturalist's Miscellany was of a whitish colour, with a dusky blueish tinge on the back: the whole body variegated with irregular orange-red spots and streaks, those about the gill-covers and abdomen flexuous: all the fins red; spotted and streaked with blue.

VARYING LABRUS.

Labrus Turdus. *L. viridis, albo, luteo, vel rubro variatus.*
Green Labrus, with white, yellow, or red variegations.
Labrus Turdus. *Lin. Gmel.* Turdus viridis major. *Will. p.* 322. ?

Length about ten or twelve inches: front teeth larger than the rest: general colour yellowish green, often varied with white or whitish spots and streaks; and sometimes with orange or red, with the abdomen silvery. It is said to admit of three principal varieties, viz. 1. yellow, with white spots, accompanied by some black ones above, and some red streaks on the sides, the abdomen silvery, streaked with red, and the fins red, spotted with white: 2. green, with the pectoral fins yellow, and the ventral blueish: 3. green, above, with gold-coloured spots about the mouth, and the abdomen yellow, with irregular white spots bordered with red; the lateral line being marked by a row of white spots. Native of the Mediterranean.

GREEN LABRUS.

Labrus Viridis. *L. viridis, subtus flavescens, corpore utrinque fascia longitudinali cærulea.*

Green Labrus, yellowish beneath, with a longitudinal blue stripe on each side the body.

Labrus viridis. *Lin. Gmel.* L. Psittacus. *Cepede.*

Turdus viridis, seu decimus Rondeletii. *Will. p.* 320. ?

NATIVE of the Mediterranean: said to vary occasionally in its colours.

STRIPED LABRUS.

Labrus variegatus. *L. ruber, striis utrinque longitudinalibus quatuor olivaceis, totidemque cæruleis.*

Red Labrus, longitudinally marked on each side with four olive and four blue stripes.

Labrus variegatus. *Lin. Gmel.* Striped Wrasse. *Penn. Brit. Zool.*

GENERAL shape resembling the rest of the oblong Labri: length about ten inches: beginning of the back a little arched: lips large, double, and reflex: back and abdomen red: sides marked with four parallel olive-green, and as many bright-blue stripes: at the base of the pectoral fins a dark-olive spot: dorsal fin marked at the beginning with a broad band of rich blue; the middle part white, the rest red: tail blue at the upper, and yellow at the lower half. Native of the European seas; the specimen described in the British Zoology was taken off the *Skerry Isles*, on the coast of *Anglesea.*

BIMACULATED LABRUS.

Labrus Bimaculatus. *L. griseus, macula utrinque media rotundata fusca, alteraque ad caudam.*

Grey Labrus, marked on each side by a spot on the middle of the body, and a second near the tail.

Labrus bimaculatus. *Lin. Gmel.* Sciæna, &c. *Lin. Mus. Ad. Frid. p.* 66. Bimaculated Wrasse. *Penn. Brit. Zool.*

Body pretty deep, and of a light colour, with two brown spots on each side, as mentioned in the specific character. Native of the European seas: found about the coasts of Cornwall.

TRIMACULATED LABRUS.

Labrus Trimaculatus. *L. ruber, squamis magnis, maculis tribus nigris ad finem dorsi.*

Red Labrus, with large scales, and three black spots towards the end of the back.

Labrus trimaculatus. *Lin. Gmel.* Labrus carneus. *Bloch. t.* 289.

Labrus ruber. *Ascan. No.* 2. *t.* 13. Trimaculated Wrasse. *Penn. Brit. Zool.*

Shape oblong: length about ten inches: teeth rather slender: fore-teeth much longer than the rest: colour rose-red: scales large: fins, except the pectoral and ventral, edged with blue. Native of the European seas: that described by Mr. Pennant taken off the coast of Anglesea.

COMBER LABRUS.

Labrus Comber. *L. gracilis miniatus, subtus flavus, fascia utrinque longitudinali argentea.*

Slender red Labrus, yellow beneath, with a longitudinal silvery streak on each side.

Comber Wrasse. *Penn. Brit. Zool.*

BACK, fins, and tail red; belly yellow, and on each side the body, beneath the lateral line, a silvery streak from gills to tail. Native of the British seas: observed by Mr. Jago about the coasts of Cornwall, and received by Mr. Pennant from the same parts.

COOK LABRUS.

Labrus Coquus. *L. gracilis purpureus et obscure cæruleus, abdomine flavo.*

Slender Labrus of a purple and dark-blue colour with yellow abdomen.

Labrus Coquus. *Lin. Gmel.* Cook Wrasse. *Penn. Brit. Zool.*

SHAPE similar to that of the Comber: back purple and dark-blue: belly yellow: inhabits the coasts of Cornwall.

CORNUBIAN LABRUS.

Labrus Cornubicus. *L. rubens, pinnis flavis, radiis pinnæ dorsalis nigris, maculaque utrinque nigra ad caudam.*

Reddish Labrus, with yellow fins, the rays of the dorsal fin black, and a black spot on each side near the tail.

Labrus Cornubicus. *Lin. Gmel.* Gold-Finny. *Penn. Brit. Zool.*

Allied in habit to the L. Tinca, being similar in the form of the body, teeth, lips, and fins, but is said never to exceed a palm in length: near the tail a black spot, and the first rays of the dorsal fin tinged with black: mentioned by Mr. Pennant from Mr. Jago, who observed it about the coast of Cornwall: the colours are not particularly specified, but from its being compared to the L. Tinca we may suppose them nearly the same, and from the name *Gold-finny* it should seem that the fins are yellow.

LEOPARD LABRUS.

Labrus Leopardus. *L. . . . . . fusco-punctatus, squamis inconspicuis, linea nigra ab oculis super opercula.*

. . . . . Labrus, speckled with brown, with inconspicuous scales, and a dark line from the eyes over the gill-covers.

L. Leopardus. *Cepede.*

Head, body, dorsal, and anal fin, and tail marked with dark spots composed of smaller ones: tail marked by a deep-black band: two teeth larger than the rest in front of each jaw. Native of the Indian seas: observed by Commerson.

MARGINAL LABRUS.

Labrus Marginalis. *L. fuscus, pinna dorsali analique rufo marginatis.*

Brown Labrus, with the dorsal and anal fin bordered with rufous: native of the Indian seas.

OCELLATE LABRUS.

Labrus Ocellaris. *L. pinna dorsali ramentacea, ocello in medio ad basin caudæ.*

Labrus with the dorsal fin ramentose, and marked by an ocellate spot near the base of the tail.

L. ocellaris. *Lin. Gmel.*

BLACK-EYED LABRUS.

Labrus Melops. *L. pinna dorsali ramentacea anique variegata, lunula fusca pone oculos. Lin. Gmel.*

Labrus with the ramentose dorsal fin and tail variegated, and a dusky crescent behind the eyes.

Described by Linnæus in the second part of the *Mus. Ad. Frid.* Native of the European seas.

NILOTIC LABRUS.

Labrus Niloticus. *L. albidus, pinna dorsali anali caudalique nebulatis.*
Whitish Labrus, with the dorsal, anal, and caudal fins clouded.
Labrus Niloticus. *Lin. Gmel.*

Described by Linnæus in the second part of the *M. A. F.* Native of the Nile.

BROWED LABRUS.

Labrus Luscus. *L. flavescens, pinnis luteis, palpebra superiore nigra.*
Yellowish Labrus, with deep-yellow fins, and black upper eye-lids.
L. luscus. *Lin. Gmel.*

Mentioned by Linnæus in the second part of the *M. A. F.* Native regions unknown.

CINEREOUS LABRUS.

Labrus Cinereus. *L. griseus, obscurius punctatus, pinnis rubris, macula ad basin caudæ nigra.*
Grey Labrus, with dusky specks, red fins, and black spot at the base of the tail.
L. griseus. *Lin. Gmel. p.* 1296.

A small species: length about three inches: shape oblong and compressed: eyes green: cheeks marked by a few blue lines. Native of the Mediterranean.

MIXED LABRUS.

Labrus Mixtus. *L. e flavo cæruleoque varius, dentibus anterioribus majoribus. Lin. Gmel. p.* 1297.

Labrus varied with a mixture of blue and yellow, with the front teeth larger than the rest.

Upper parts blue, lower yellow, clouded with brown variegations: front teeth larger than the others: native of the Mediterranean: suspected by Gmelin to be a variety of the *L. Pavo.*

FULVOUS LABRUS.

Labrus Fulvus. *L. fulvus, rictu amplo, maxilla inferiore longiore.*

Fulvous Labrus, with wide mouth, and lower jaw longer than the upper.

L. fulvus. *Lin. Gmel.* Yellow-Fish. *Catesb. Car.* 2. *t.* 10.

Length about ten inches: native of the American seas.

DARK LABRUS.

Labrus Merula. *L. nigro-cæruleus, squamis magnis, dentibus curvis.*

Blackish-blue Labrus, with large scales, and curved teeth.

L. Merula. *Lin. Gmel. Aldrov. p.* 35. ? ?

Length about twelve inches: eyes red. Native of the European seas: said to vary sometimes into whiteness.

FULIGINOUS LABRUS.

Labrus Fuliginosus. *L. capite viridi rubro luteoque vario, corpore fasciis transversis quatuor vel quinque fuscis.*

Labrus with head varied with green, red, and yellow, and body marked by four or five transverse dusky bands.

L. fuliginosus. *Cepede.*

MENTIONED by Cepede from Commerson: native of the Indian seas.

FUSCOUS LABRUS.

Labrus Fuscus. *L. fuscus, fasciis utrinque duabus longitudinalibus viridibus.*

Brown Labrus, with two longitudinal green bands on each side.

L. brun. *Cepede.* 3. *p.* 437.

THE two front teeth in each jaw longer than the rest: dorsal and anal fin bordered with green: pectoral light green: ventral yellow at the base, and brown at the tips: lateral line branched. Described by Cepede from Commerson: native of the Indian seas.

MARBLED LABRUS.

Labrus Marmoratus. *L. maculis fuscis albidisque marmoratus.*
Labrus marbled with brown and whitish variegations.
L. marbré. *Cepede.*

Almost the whole surface of the animal scattered over with small dark spots, accompanied by larger whitish ones, so as to appear marbled: teeth equal and distinct: native of the Indian seas: observed by Commerson.

LARGE-TAILED LABRUS.

Labrus . . . . . , *supra striis plurimis longitudinalibus fuscis, cauda magna nigricante.*
Labrus marked above by numerous longitudinal brown streaks, with large dusky tail.
L. large-queue. *Cepede.*

Dorsal fin dusky on the back-part, and marked in front by a dusky spot: anal fin dusky: mouth small: teeth strong and triangular: native of the Indian seas: observed by Commerson.

CRENULATED LABRUS.

Labrus Crenulatus. *L. flavus, dorso purpureo, pinna a capite ad caudam continuata, dentibus crenulatis.*
Yellow Labrus, with purple back, dorsal fin continued to the tail, and crenulated teeth.
L. Cinædus. *Lin. Gmel.*

Native of the Mediterranean: esteemed as an edible fish.

PARTERRE LABRUS.

Labrus Hortulanus. *L. corpore caudaque striis decussatis, macula inter singulas areolas.*
Labrus with body and tail marked by decussating stripes, and a spot in each division.
L. Parterre. *Cepede.*

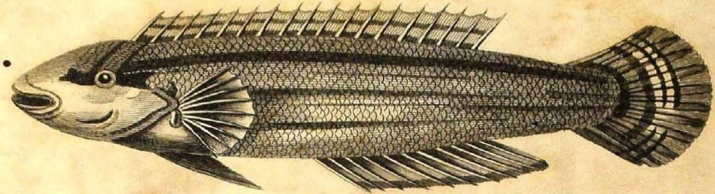
Mentioned by Cepede from Commerson, who observed it in the Indian seas.

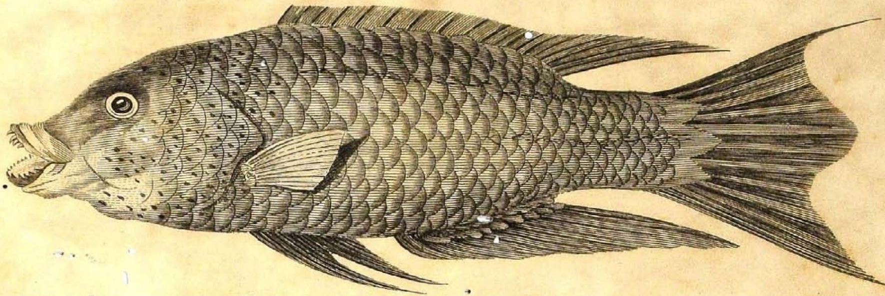
PARRAKEET LABRUS.

Labrus Psittaculus. *L. viridis, fasciis utrinque tribus longitudinalibus rubris, pinna dorsali flava, fascia longitudinali rubra.*
Green Labrus, with three longitudinal red stripes on each side, and yellow dorsal fin marked by a longitudinal red band.
L. Perruche. *Cepede.*

A beautiful species: over each eye a black streak, and a red band bordered with blue from the eye to the beginning of the dorsal fin, and along the edges of the gill-covers: anal fin yellow, with a red border: tail yellow, with four or five curved transverse bands of red and blue: native of the American seas: described by Cepede from a drawing by Plumier.

PARRAKEET LABRUS.





Heath sculp

TRILOBATE LABRUS.

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BLOOD-SPOTTED LABRUS.

Labrus Cruentatus. *L. argenteus, maculis magnis irregularibus sanguineis tesselatus, pinnis flavis.*

Silvery Labrus, tesselated with large irregular blood-red spots, with yellow fins.

L. ensanglanté. *Cepede.*

Teeth small, short, and separate: eyes very large: lateral line near the back: end of the tail of smaller diameter than the base: described by Cepede from a drawing by Plumier: native of the American seas.

FULL-EYED LABRUS.

Labrus Calops. *L. argenteus, dorso fusco, squamis magnis, oculis grandibus nigris.*

Silvery Labrus, with dusky back, large scales, and very large black eyes.

L. Calops. *Cepede.*

Native of the Mediterranean, near the mouths of the rivers of the ancient *Neustria* *: a large dusky patch over the base of each of the pectoral fins.

* Comprehending Normandy, &c.

ASCANIAN LABRUS.

Labrus Ascanii. *L. supra ruber, maculis striisque viridibus, subtus flavescens punctis rubris.*

Labrus with the upper parts red, varied by green spots and streaks, and the under parts yellowish specked with red.

L. rone. *Cepede.* Le Rone. *Ascan. t.* 14.

LENGTH about seven inches: dorsal and anal fin red, with two or three green stripes: tail green, tipped with red. Native of the Northern seas.

BEAUTIFUL LABRUS.

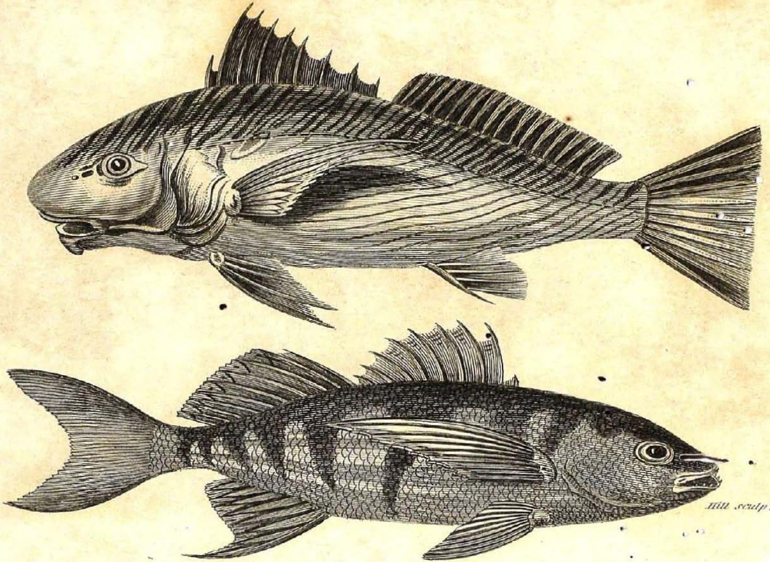
Labrus Formosus. *L. ruber, striis longitudinalibus flexuosis interruptis cæruleis, pinnis cæruleo marginatis.*

Red Labrus, with longitudinal, interrupted, flexuous blue streaks, and fins edged with blue.

Paon bleu. *Ascan. t.* 12. Sparus formosus. *Nat. Misc.* 1. *pl.* 31.

LENGTH about twelve inches: back of a deep, purplish red: belly inclining to yellow: dorsal fin marked at its origin by a broad patch of blue: gill-covers varied with blue streaks: scales rather large than small: a very beautiful species: allied to the *Striped Labrus*: extremely well figured both in the work of *Ascanius*, and in the Naturalist's Miscellany; the latter figure being taken from a specimen in the Leverian Museum.

BLUE FINNED LABRUS.



Hill sculp.

CHEILODIPTERE CHRYSOPTERE. Cepede.

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BULL-EYED LABRUS.

Labrus Boops. *L. maxilla inferiore longiore, oculis permagnis, pinnis dorsalibus duabus.*
Labrus with the lower jaw longer than the upper, very large eyes, and two dorsal fins.
Labrus Boops. *Lin. Gmel.*

Teeth in the lower jaw large and sharp: eyes extremely large: native of Japan.

BLUE-FINNED LABRUS.

Labrus Cyanopterus. *L. supra rubro flavo viridique varius, subtus viridi fuscoque, pinnis cæruleis.*
Labrus varied above with red, yellow, and green, beneath with green and brown, with blue fins.
Cheilodiptere cyanoptere. *Cepede.*

A beautiful species: body above the lateral line varied with undulated oblique stripes of yellow, green, and red; below the lateral line with brown and green: pectoral, ventral and anal fins yellow, the dorsal fins and tail blue: beneath the lower jaw a short cirrus: native of the American seas: described by Cepede from a drawing by Plumier: perhaps more properly belonging to the genus Sciæna than Labrus.

CHEQUERED LABRUS.

Labrus Centiquadrus. *L. albido purpureoque tesselatus.*
Labrus tesselated with alternate purple and whitish marks.
L. echiquier. *Cepede.*

Head and fins varied with red: whole body tesselated with blackish-purple and whitish areolæ: a black spot on each of the pectoral fins: tail yellow: size not mentioned: native of the Indian seas: observed by Commerson.

SMALL-SCALED LABRUS.

Labrus Microlepidotus. *L. argenteus, dorso subfusco, pinnis albis.*
Silvery Labrus, with brownish back and white fins.
L. microlepidotus. *Bloch. t.* 292.

Length about twelve inches: colour silvery, tinged with yellowish brown on the back, and dorsal fin: rest of the fins white: scales rather small for the size of the fish. Native regions unknown: described by Dr. Bloch from a specimen in the Linkian collection at Leipzic.

GIRDLED LABRUS.

Labrus Cingulum. *L. antice lividus, postice fuscus, cingulo intermedio albido, capite punctis atropurpureis.*

Labrus with the fore-parts livid, the hind-parts brown, with an intermediate white girdle.

L. Cingulum. *Cepede.*

Dorsal fin edged with white: at the tip of the gill-covers a black spot edged with white. Native of the Indian seas: observed by Commerson.

DIANA LABRUS.

Labrus Diana. *L. . . . . . . , lunulis fuscis maculatus.*

. . . . . Labrus, spotted with brown crescents.

L. Diane. *Cepede.*

Mentioned by Cepede from Commerson: native of the Indian seas: in the upper jaw are four large teeth, and in the lower two.

GREAT-TOOTHED LABRUS.

Labrus Macrodon. *L. dentibus quatuor magnis curvis.*

Labrus with four large curved teeth.

L. Macrodonte. *Cepede.*

Scales rather large: hind part of the head ascending: four strong curved teeth at the tip of each jaw, and one on each side the corners of the mouth: native regions unknown.

NEUSTRIAN LABRUS.

Labrus Neustriæ. *L. dorso fusco luteo et subviridi, lateribus fusco luteo alboque marmoratis.*

Labrus with the back varied with brown, yellow, and greenish, the sides marbled with brown, yellow, and white.

L. Neustriæ. *Cepede.*

TEETH equal, strong, and separate: dorsal fin marked with the same colours as the sides: pectoral, ventral, anal, and caudal of the same colour with the back: inhabits the Mediterranean.

PERDIC LABRUS.

Labrus Perdica. *L. dorso recto, vittis utrinque longitudinalibus undulatis subflavis, pinnis pectoralibus basi macula cærulea.*

Labrus with strait back, marked on each side with longitudinal, undulated, yellowish stripes, and a black spot at the base of the pectoral fins.

L. Perdica. *Cepede.*

HEAD brown: dorsal and anal fin red: native of the Arabian seas: described by Forskal.

SOFT-BACKED LABRUS.

Labrus Malapteronotus. *L. . . . . . . , maxilla inferiore longiore, fasciis utrinque longitudinalibus? albidis, pinna dorsali molli*.*
. . . . . Labrus, with the lower jaw longer than the upper, longitudinal? whitish bands on each side, and soft dorsal fin.
L. Malapteronote. *Cepede.*

Front teeth in the lower jaw inclining forwards: head and gill-covers destitute of scales: gill-covers terminated by a dark-coloured spot: dorsal fin furnished with soft rays only: native of the Indian seas.

GUAZA LABRUS.

Labrus Guaza. *L. fuscus, cauda rotundata ramentacea.*
Brown Labrus, with rounded ramentose tail.
L. Guaza. *Cepede.*

Observed by Leoffling: native of the European seas.

* Many of the specific characters affixed to the Labri must be received with proper latitude, and are by no means to be regarded as absolutely decisive, it being hardly possible to form such.

OBSCURE LABRUS.

Labrus Exoletus. *L. corpore lineis longitudinalibus cæruleis, pinna dorsali ramentacea.*
L. with blue longitudinal lines on the body, and ramentose dorsal fin.
L. exoletus. *Lin. Gmel.* Cinque-Epines. *Cepede.*

ANAL fin furnished with five sharp rays and eight soft: native of the Mediterranean and Northern seas.

CHINESE LABRUS.

Labrus Chinensis. *L. pinna dorsali ramentacea, corpore livido, vertice retuso. Lin. Gmel. p.* 1291.
Livid Labrus with retuse head, and ramentose dorsal fin.

DESCRIBED in the above specific character by Dr. Gmelin: native of China.

JAPANESE LABRUS.

Labrus Japonicus. *L. totus flavissimus.*
Labrus entirely of a deep yellow.
L. Japonicus. *Lin. Gmel.*

DESCRIBED by Houttyn in the 20th vol. of the Haarlem Transactions: length six inches: teeth small: colour of the whole fish deep yellow.

LINEAR LABRUS.

Labrus Linearis. *L. oblongus albidus, pinnæ dorsalis radio ultimo inermi.*
Oblong Labrus, with the last ray of the dorsal fin soft.
L. linearis. *Lin. Gmel.*

Body of an elongated form: head compressed: dorsal fin very long, with twenty sharp rays and one soft: described by Linnæus in the first volume of the Amænitates Academicæ. Native of the American and Indian seas.

LUNULATED LABRUS.

Labrus Lunulatus. *L. fusco-virescens, squamis singulis fascia ferruginea, capite pectoreque rubro guttatis.*
Greenish-brown Labrus, with each scale marked by a ferruginous band, and the head and breast spotted with red.
L. lunulatus. *Lin. Gmel. Forsk. Arab.*

Length about twelve inches: scales broad and striated: eyes brownish-green: gill-covers commonly marked at the hinder edge with a fulvous crescent bordered with black: native of the Arabian seas: observed by Forskal.

RETICULATED LABRUS.

Labrus Reticulatus. *L. viridis, rubro reticulatus, macula operculorum pinnæque dorsalis nigra.*

Green Labrus, reticulated with brown, and with a black spot on the gill-covers and dorsal fin.

L. venosus. *Lin. Gmel.*

A SMALL species: length three inches: shape ovate: dorsal fin ramentose and marked with a red band: native of the Mediterranean.

GUTTATED LABRUS.

Labrus Guttatus. *L. rubescens, nigro varius, punctis seriatis albis.*

Reddish Labrus, with black variegations and white spots disposed in a row.

L. guttatus. *Lin. Gmel.*

LENGTH three inches: under each eye two oblique black streaks: fins reddish; anal marked with white spots: native of the Mediterranean.

GUTTULATED LABRUS.

Labrus Guttulatus. *L. albo confertim guttatus, dorso subfusco, squamis minutis.*

Labrus thickly marked with round white spots, with brownish back and minute scales.

L. guttatus. *Bloch, t.* 287.

A BEAUTIFUL species: length about five inches: colour blueish with a cast of brown on the back: the whole fish beautifully and thickly marked with small, round, white or silvery spots: those on the back fin yellowish, and on each side the back an undulated silvery line: scales very small: native regions unknown.

BERGYLT LABRUS.

Labrus Bergylta. *L. fusco-flavescens, lateribus subfasciatis, pinnis maculatis.*

Brownish-yellow Labrus, with subfasciated sides, and spotted dorsal fin.

L. maculatus. *Bloch. t.* 294.

LENGTH about a foot: scales large: lips reflex: dorsal fin ramentose: all the fins spotted with brown: native of the European seas.

CARINATED LABRUS.

Labrus Carinatus. *L. squamis bicarinatis.*
Labrus with bicarinated scales.
L. aristatus. *Cepede.*

SHAPE oval: teeth separate: the two front teeth in the lower jaw longer than the rest: native of the fresh waters of China.

WHITE-BANDED LABRUS.

Labrus Albovittatus. *L. subflavus, fasciis utrinque tribus longitudinalibus albis.*
Yellowish Labrus, with three longitudinal white bands on each side.
L. albovittatus. *Cepede.*

NATIVE of the Northern seas?

PUNCTATED LABRUS.

Labrus Punctatus. *L. subfuscus, lineis longitudinalibus plurimis fusco-punctatis, pinna dorsali ramentacea.*
Brownish Labrus, with many longitudinal brown-spotted lines, and ramentose dorsal fin.
L. punctatus. *Lin. Gmel. Bloch. t.* 295.

LENGTH about five inches: colour whitish, with the back brown: scales large: body marked by several rows of dusky spots; owing to a spot at the base of each scale: dorsal fin produced in a

falciform manner at its extremity: anal fin the same: both, as well as the tail, marked by rows of blackish spots: pectoral and ventral fins long and dusky: on each side the body three black spots; one on the gill-covers, another in the middle, and a third near the tail: habit broad, like a bream: native of Surinam, inhabiting rivers.

PLEAT-LIPPED LABRUS.

Labrus Ossifagus. *L. . . . . . . , labiis plicatis, pinna dorsali radiis triginta. Lin. Gmel. p.* 1290.

. . . . . Labrus, with pleated lips, and thirty rays in the dorsal fin.

INTRODUCED by Dr. Gmelin into his edition of the Systema Naturæ, but no mention made of any farther particulars than those announced in the specific character, except that it is a native of Europe.

ONITE LABRUS.

Labrus Onitis. *L. fuscus, subtus albido-maculatus, pinna dorsali ramentacea.*

Brown Labrus, spotted with white beneath, and with ramentose dorsal fin.

L. Onitis. *Lin. Gmel.*

DESCRIBED by Linnæus in the second part of the Mus: Ad: Frid: native regions unknown.

ANILE LABRUS.

Labrus Vetula. *L. flavescens, capite caudaque carneis, corpore fusco variato, pinnis ventralibus anali caudalique nigro marginatis.*

Yellowish Labrus, with flesh-coloured head and tail, body varied with brown, and ventral, anal, and caudal fins edged with black.

L. Vetula. *Bloch. t.* 293.

Habit that of L. maculatus: fins pale: dorsal and anal spotted with black along the base: tail marked by a transverse row of spots: lips reflex: irides blue. Native of the Mediterranean and Northern seas: esteemed as an edible fish.

NORWEGIAN LABRUS.

Labrus Suillus. *L. pinna dorsali ramentacea, macula nigra supra caudam, spinis dorsalibus novem. Lin. Gmel.*

Labrus with ramentose dorsal fin, black spot above the tail, and nine dorsal spines.

Bergsnyltra. *Lin. Faun. Suec.* 330.

Native of the Northern seas; observed about the coasts of Norway.

IURELLA LABRUS.

Labrus Julis. *L. lateribus cærulescentibus, vitta longitudinali fulva utrinque dentata. Lin. Gmel.*

Labrus with blueish sides, marked by a longitudinal, fulvous, dentated or undulated band.

L. Julis. *Lin. Syst. Nat. p. 476. Mus. Ad. Frid. 2. p. 75. Bloch. t. 287. f. 1.*

LENGTH about eight inches: form rather lengthened: general colour blueish or violet on the upper parts, with an undulating yellow stripe on each side towards the back: abdomen whitish: pectoral, ventral fins, and tail pale: dorsal fin fulvous or orange-coloured at its origin, and marked along the base by a brown or purplish stripe: scales small: lateral line placed pretty near the back, and descending suddenly at a small distance from the tail. Native of the Mediterranean, generally swimming in small shoals: the male is said to be distinguished from the female by having the back of a green colour. By the more ancient ichthyologists this species seems to have been considered as the most beautiful of the finny race, but this must have been owing to the very confined state of natural history at the time those authors lived. It has also been regarded as a poisonous fish, and capable of inflicting a dangerous wound, but this, like many other errors of antiquity, is now entirely exploded.

PARROT LABRUS.

Labrus Paroticus. *L. griseus, subtus albidus, linea laterali curva, pinnis rufis, operculis cyaneis.*

Grey Labrus, whitish beneath, with curved lateral line, and blue gill-covers.

L. paroticus. *Lin. Syst. Nat. p.* 476. *Mus. Ad. Frid.* 2. *p.* 76.

NATIVE of the Indian seas.

KARUT LABRUS.

Labrus Karuta. *L. supra nigricans, stria utrinque longitudinali flava, subtus flavescens pinnis rufis.*

Labrus with the body blackish above with a longitudinal yellow stripe on each side, and beneath yellowish with rufous fins.

Johnius Karutta. *Bloch. t.* 356.

Labre Karut. *Cepede.*

LENGTH about twelve inches: form oblong: upper jaw very obtuse, the mouth being situated beneath it: dorsal fins two, the former triangular, the latter of moderate width and continued to the tail: both these fins as well as the tail, which is slightly rounded, are of a blackish colour: the other fins reddish: scales rather large: irides red: teeth small.

By Dr. Bloch this and the succeeding species are stationed in a distinct genus under the title of *Johnius*, so named from a correspondent of Dr. Bloch's to whom he was obliged for specimens of the fish, which is a native of the Indian seas.

KARUT LABRUS.

Jackson sculp.

1803 July 1 London Published by G. Kearsley, Fleet Street.

CUPREOUS LABRUS.

Labrus Cupreus. *L. subargenteus, capite dorso pinnisque subcupreis.*

Subargenteous Labrus, with head, back, and fins tinged with copper-colour.

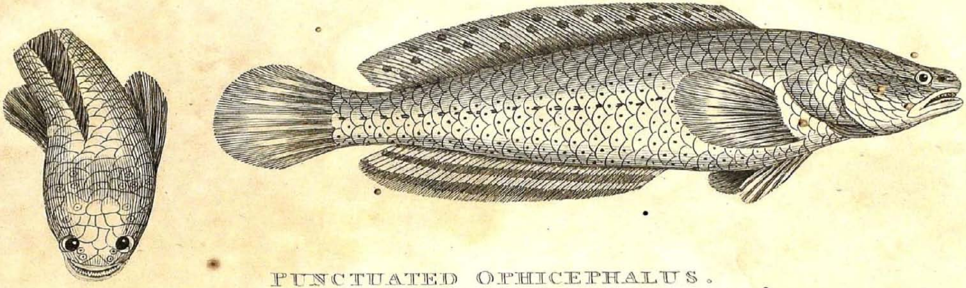
Johnius Aneus. *Bloch. t.* 357.

General habit that of the former species, but rather broader: lower jaw rather longer than the upper: teeth sharp, and of moderate size: scales rather large: back, dorsal fins, and tail of a dusky tinge, but with a strong cast of coppery red towards the base, pectoral and ventral fins bright copper-red, and, as in the former species, of a lanceolate shape. Native of the Indian seas, and called by the natives of Malabar by the name of *Anei Kattalei.*

These fishes seem equally allied to the Labri and the *Sciænæ*, and might perhaps be arranged with equal propriety under the latter genus, with which they agree in many particulars relative to habit or general appearance.

The same apology must be made for the history of this genus as of the preceding; the species being extremely numerous and very little understood. It is by no means improbable that many of the Labri may be rather varieties than species truly distinct; and it may be added, that several may with equal

propriety rank under the genus Sparus. It follows therefore, that any repetitions, which in arranging these two genera may, through oversight, have easily taken place, must be rather an advantage than an inconvenience; as tending to facilitate the investigation of the species.



Heath sculp.

PUNCTUATED OPHICEPHALUS.

1803 July 1. London Publish'd by G. Kearsley Fleet Street.

OPHICEPHALUS. OPHICEPHALUS.

Generic Character.

Caput squamis difformibus tectum.	*Head* coated with dissimilar scales.
Corpus elongatum.	*Body* elongated.

PUNCTATED OPHICEPHALUS.

Ophicephalus Punctatus. *O. nigricans, subtus pallidior, capite poroso, corpore nigro-punctulato.*

Dusky Ophicephalus, paler beneath, with the head pierced by pores, and the body speckled with black points.

Ophicephalus punctatus. *Bloch. t.* 358.

LENGTH about ten inches: dorsal fin commencing at no great distance from the head, and continued nearly to the tail: it is of moderate breadth, and of a dusky colour spotted with black; anal fin of similar shape and colour: tail rounded: pectoral fins rounded, and of moderate size: ventral smaller: scales rather large; those on the head dissimilar, viz. on the upper part angular, as in snakes: on the sides ovate or rounded: lateral line nearly strait. Native of India, inhabiting rivers and lakes, and is considered as a delicate and wholesome food.

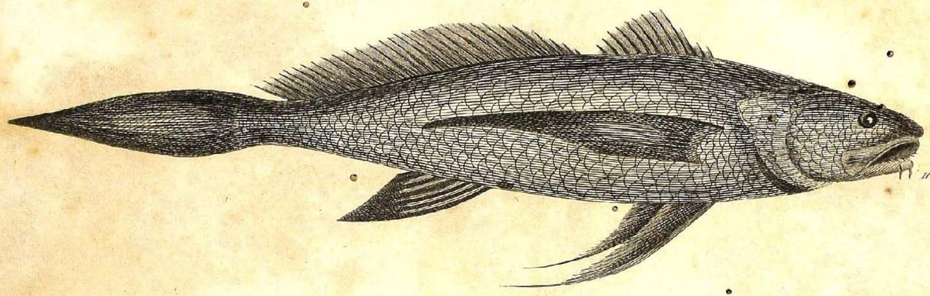
STRIATED OPHICEPHALUS.

Ophicephalus Striatus. *O. nigricans, abdomine pinnisque albido fuscoque striatis.*

Dusky Ophicephalus, with the abdomen and fins striated with dusky and whitish variegations.

Ophicephalus striatus. *Bloch. t.* 359.

Length about twelve inches: shape rather longer than that of the preceding species: abdomen whitish, varied with obliquely transverse dusky blotches or streaks: dorsal and anal fin of similar proportions to those of the former species, and of a pale colour, marked by numerous obliquely transverse narrow dusky stripes: tail, pectoral and ventral fins rounded: scales rather large: teeth rather small, sharp, and of equal size. Native of India, inhabiting lakes, where it often grows to a much larger size than first mentioned: it is in equal esteem as a food with the former species, and even recommended as a proper diet for convalescents: native name *Wrahl.*



Heath sculp.

BEARDED LONCHURUS.

1[illegible]3 July 1. London Publish'd by G. Kearsley Fleet Street.

Generic Character.

Caput squamosum.
Pinnæ ventrales discretæ.
Cauda lanceolata.

Head scaly.
Ventral fins separate.
Tail lanceolate.

BEARDED LONCHURUS.

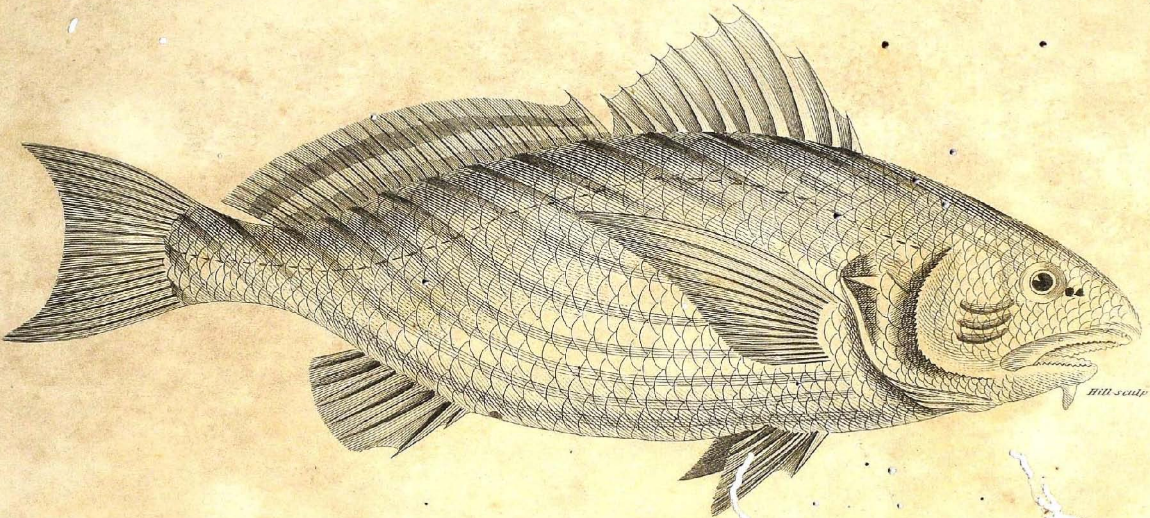
Lonchurus Barbatus. *L. fusco-ferrugineus, naso subproducto, maxilla inferiore bicirrata, pinnarum ventralium radio primo elongato setaceo.*

Ferruginous-brown Lonchurus, with slightly lengthened nose, two beards at the lower jaw, and the first ray of the ventral fins elongated into a bristle.

Lonchurus barbatus. *Bloch. t.* 360.

LENGTH about twelve inches: shape somewhat lengthened tapering gradually to the tail, which is of a lanceolate form: scales middle-sized: pectoral fins long, narrow, and sharp: ventral fins sharp, and placed at some distance from each other: dorsal fin double, or at least so deeply divided as to appear two: the former triangular, the latter of moderate width, and continued nearly to the tail: nose or upper lip produced into an obtuse short snout, so as to cause the mouth to appear as if placed somewhat beneath: teeth small: beneath the tip of the lower jaw two small short beards. Native of Surinam.

The two preceding genera of *Ophicephalus* and *Lonchurus*, considered in point of natural arrangement, seem to have a greater affinity to the genus *Sciæna* than to any other: both were instituted by Dr. Bloch.



Hill sculp.

BEARDED SCIÆNA.

180[illegible] July 1. London Publish'd by G Kearsley Fleet Street.

SCIÆNA. SCIÆNA.

Generic Character.

Caput squamosum.	*Head* scaly.
Pinnæ dorsales duæ, in fossula recondendæ.	*Dorsal fins* two, seated in a furrow*, into which they may occasionally withdraw.
Membr. branch. radiis sex.	*Gill-membrane* six-rayed.

With divided or lunated tail.

BEARDED SCIÆNA.

Sciæna Cirrosa. *S. flavescens, subtus subargentea, lineis longitudinalibus obliquis nigricantibus, mento barbato.*

Yellowish Sciæna, subargenteous beneath, with obliquely longitudinal dusky lines, and a beard on the lower jaw.

Sciæna cirrosa. *Lin. Gmel.* *Bloch.*

Σκιαινα. *Arist. Aelian, &c.* Umbra. *Rondel, &c.*

HABIT that of a Carp: length from one to two feet: colour pale yellow, brownish on the back, and marked on each side by many obliquely longitudinal dusky-blue lines, which assume a slightly silvery cast towards the abdomen: upper lip obtuse,

* This is not equally conspicuous in all the Sciænæ, nor confined to this genus; occurring in some of the *Spari, Percæ, &c.*

and longer than the lower: teeth small: first dorsal fin triangular, and pale brown; the second white with a brown stripe: pectoral, ventral, and caudal dusky; anal red: tail slightly lunated: at the base of the gill-covers a black spot, and beneath the chin a short fleshy beard: native of the Mediterranean and other seas: known to the ancient Greeks and Romans, by whom it was held in considerable estimation as a food.

BASSE SCIÆNA.

Sciæna Labrax. *S. subargentea, dorso fusco, pinnis flavo-rubentibus, caudali fusca.*

Subargenteous Sciæna, with brown back, yellowish-red fins, and dusky tail.

Sciæna Labrax. *Bloch.* Perca Labrax. *Lin.*

Basse. *Penn. Brit. Zool.*

Habit of a Salmon: size considerable, growing, according to some authors, to the length of several feet: colour blueish silvery, with a dusky cast on the back: scales rather small: eyes reddish: mouth and gill-covers tinged with pale red: tail slightly forked: lateral line nearly strait: native of the Mediterranean and Northern seas, and often entering rivers: known to the ancients by the names of *Labrax* and *Lupus*, and much esteemed as a food, particularly by the Romans.

TWO-SPINED SCIÆNA.

Sciæna Diacantha. *S. subargentea, lineis longitudinalibus flavis, dorso glauco, operculis bispinosis.*

Subargenteous Sciæna, with longitudinal yellow lines, and two-spined gill-covers.

Sciæna diacantha. *Bloch.*

Length about twelve inches: habit allied to that of *S. Labrax*: fins glaucous, but the pectoral, ventral fins, and tail, reddish at the base: tail slightly lunated: eyes yellow: scales rather large: native of the Mediterranean.

PIKE-HEADED SCIÆNA.

Sciæna Undecimalis. *S. rubescens, abdomine argenteo, pinnis dorsalibus caudaque subfuscis.*

Reddish Sciæna, with silvery abdomen, and brownish dorsal fins and tail.

Sciæna undecimalis. *Bloch.*

Length about twelve inches: habit somewhat resembling that of a Pike, the shape of the head being greatly similar, and the lower jaw longer than the upper: teeth small: back rising pretty suddenly from the eyes: scales middle-sized: lateral line blackish and very distinct: tail slightly forked: native of the American seas, and said to be common about the coasts of Jamaica. In the second dorsal fin are eleven rays, from which circumstance is derived the trivial name applied to this species by Dr. Bloch.

LINEATED SCIÆNA.

Sciæna Lineata. *S. argentea, lineis longitudinalibus flavis, dorso violaceo, pinnis subflaventibus.*

Silvery Sciæna, with longitudinal yellow lines, violaceous back, and yellowish fins.

Sciæna lineata. *Bloch.*

Length about a foot: habit of a Trout: lower jaw rather longer than the upper: scales middle-sized: eyes yellow: native of the Mediterranean.

PUNCTATED SCIÆNA.

Sciæna Punctata. *S. subargentea, dorso subviolaceo nigro-punctato.*

Subargenteous Sciæna, with subviolaceous back, spotted with black points.

Sciæna punctata. *Bloch.*

Length about twelve inches: habit that of a Trout: head short and thick: gill-covers tinged with violet; head with yellow: dorsal fins glaucous: pectoral and ventral pale red: anal and tail glaucous with pale red base: scales middle-sized: eyes yellow: native of the Mediterranean.

PLUMIER'S SCIÆNA.

Sciæna Plumieri. *S. subviolacea, fasciis transversis fuscis, lineis longitudinalibus pinnisque flavis.*
Subviolaceous Sciæna, with transverse brown bands, and yellow longitudinal lines and fins.
Sciæna Plumieri. *Bloch.*

Habit that of a Perch: head very short: scales middle-sized: eyes yellow: teeth small: pectoral fins lanceolate: tail large and slightly lunated: native of the American seas: described by Bloch from a drawing by Plumier.

MAURITIAN SCIÆNA.

Sciæna Mauritii. *S. argentea, dorso subfusco, pinna dorsali prima spinosa, radiis novem.*
Silvery Sciæna, with brownish back, and the first dorsal fin spiny, with nine rays.
Sciæna Mauritii. *Bloch.*

Length about six inches, but said to grow to the size of a Perch: habit that of a Salmon, and extremely resembling, except in size, the *S. Labrax*, but the scales are larger in proportion: colour silvery, with a slight dusky tinge on the back, and the fins pale: tail slightly lunated, yellowish at the base, and dusky towards the end: native of Brasil: described by Bloch from a drawing by Prince Maurice.

CORO SCIÆNA.

Sciæna Coro. *S. argenteo-cærulescens, dorso subfusco, corpore utrinque striis octo transversis fuscis.*
Silvery-blueish Sciæna, with brownish back, and body marked on each side with eight transverse brown bands.
Sciæna Coro. *Bloch.*

LENGTH from six to twelve inches: habit that of *S. Mauritii*: scales middle-sized; fins pale: tail slightly forked, yellowish at the base, and dusky at the end. Native of the Brasilian seas.

CILIATED SCIÆNA.

Sciæna Ciliata. *S. squamis trapeziformibus, transversim carinatis, ciliatis.*
Sciæna with trapezoid, transversely ciliated scales.
Sciene ciliée. *Cepede.*

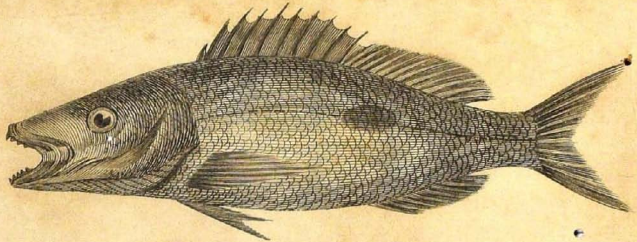
MENTIONED by Cepede from a specimen in the Prince of Orange's Museum, but neither size, colours, nor native region, particularized.

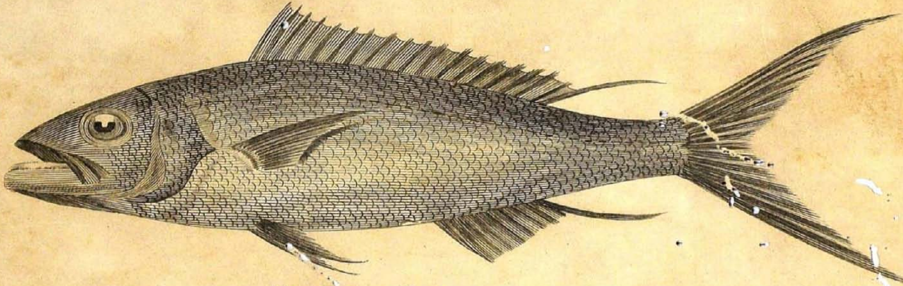
CAPPA SCIÆNA.

Sciæna Cappa. *S. capitis lateribus squamarum ordine duplici. Lin. Syst. Nat. p.* 480. *Mus. Ad. Frid.* 2. *p.* 81.
Sciæna with a double row of scales on each side the head.

NATIVE of the Mediterranean: mentioned by Linnæus in the second part of the Museum Adolphi Friderici.

SINGLE-SPOTTED SCIÆNA. p. 539





FORKED LABRUS.

Heath sculp.

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SCALE-BACKED SCIÆNA.

Sciæna Lepisma. *S. pinna dorsali intra duo folia squamea recondenda. Lin. Syst. Nat. p.* 480.
Sciæna with the dorsal fin retractile between two scaly leaves.

Native of the Mediterranean?

SINGLE-SPOTTED SCIÆNA.

Sciæna Unimaculata. *S. macula fusca in medio utriusque lateris. Lin. Syst. Nat. p.* 480.
Sciæna with a brown spot on each side the middle of the body.

Native of the Mediterranean.

BOHAR SCIÆNA.

Sciæna Bohar. *S. oblonga rubescens, lineis nebulisque albentibus.*
Oblong, reddish Sciæna, with whitish lines and clouds.
Sciæna Bohar. *Forsk. arab.*

Native of the Arabian seas.

GIBBOUS SCIÆNA.

Sciæna Gibbosa. *S. rubescens, albo-punctata, dorso gibbo.*
Reddish Sciæna, with white specks and gibbous back.
Sciæna gibba. *Forsk. arab.*

Native of the Arabian seas: body oval: scales red, tipped with white: greatly allied to *S. Bohar.*

SILVER-SPOTTED SCIÆNA.

Sciæna Argentata. *S. fusca, argenteo-maculata.*
Brown Sciæna, with silvery spots.
Sciæna argento-maculata. *Forsk. arab.*

Much allied to *S. Bohar*: lower lip longer than the upper: from each eye to the mouth a curved blue streak: colour of the scales on the upper parts blackish, with silvery margins and tips: on the abdomen rufescent, with pale margins: fins dusky rufous: the dorsal fin glaucous. Native of the Arabian seas.

RED SCIÆNA.

Sciæna Rubra. *S. obscure rubra, vittis utrinque octo longitudinalibus subalbentibus.*
Dull-red Sciæna, with eight longitudinal whitish bands on each side.
S. rubra. *Forsk. arab. Lin. Gmel.*

Eyes red; orbit spiny and serrate: teeth short and setaceous: dorsal fins connected; the first whitish, with two longitudinal red bands: scales spiny at the edges: native of the Arabian seas.

LONG-SPINED SCIÆNA.

Sciæna Spinifera. *S. rubra, pinnis dorsalibus connexis, capite spinoso, operculi anterioris spina longissima. Lin. Gmel. Forsk. arab.*

Red Sciæna, with connected dorsal fins, spiny head, and a very long spine on the anterior gill-cover.

Native of the Arabian seas, growing to a considerable size, and yielding a great quantity of oil: the wounds inflicted by the spine of the gill-covers are said to be very painful.

JARBUA SCIÆNA.

Sciæna Jarbua. *S. argentea, vittis utrinque duabus fuscis in annulos super dorsum confluentibus.*

Silvery Sciæna, with two brown bands on each side, uniting into rings over the back.

Sciæna Jarbua. *Lin. Gmel. Forsk. arab.*

Middle of the back marked by a dusky spot: teeth subulate: eyes blue: dorsal fin spotted with black: native of the Arabian seas.

GOLD-STRIPED SCIÆNA.

Sciæna Fulviflamma. *S. albido-flavescens, vittis quinque vel sex longitudinalibus aureis, macula media nigra.*
Whitish-yellow Sciæna, with five or six longitudinal gold-coloured bands, and a middle black spot.
Sciæna fulviflamma. *Lin. Gmel. Forsk. arab.*

First dorsal fin dusky; the second and the other fins yellow: the gold-coloured lines on the body are sometimes rather obscure: teeth strong, distant, and conic-subulate. Native of the Arabian seas.

With even or rounded tail.

BLACK SCIÆNA.

Sciæna Nigra. *S. subtus subargentea, oculis rubris.*
Black Sciæna, with subargenteous abdomen, and red eyes.
Sciæna nigra *Bloch.* Sciæna Umbra. *Lin.*

Size of a Perch: scales middle-sized, and marked with small black specks: fins black: tail rounded. Native of the Mediterranean.

LARGE-SCALED SCIÆNA.

Sciæna Macrolepidota. *S. flava, fasciis transversis fusco-violaceis, pinnis maculatis.*

Yellow Sciæna, with transverse brownish-violet bands and spotted fins.

Sciæna macrolepidota. *Bloch.*

Length about a foot: head short, and sloping rather suddenly: scales pretty large: dorsal, anal, and caudal fin spotted with brown: pectoral fins plain and tinged with violet: ventral fins red: eyes blue: native of India.

SPOTTED SCIÆNA.

Sciæna Maculata. *S. fusco flavoque varia, pinnis maculatis.*

Sciæna varied with brown and yellow, with spotted fins.

Sciæna maculata. *Bloch.*

Length about five inches and a half: shape oblong; back rising at the fore-part, and sloping towards the tail: scales middle-sized: dorsal fins, anal, and caudal spotted with brown: dorsal fins placed at some distance from each other: pectoral and ventral fins unspotted: tail of an ovate shape: native regions unknown.

CYLINDRIC SCIÆNA.

Sciæna Cylindrica. *S. cylindrica, flavescens, cingulis pluribus fuscis, pinnis maculatis.*

Cylindric, yellowish Sciæna, with several dusky girdles, and spotted fins.

Sciæna cylindrica. *Bloch.*

LENGTH about six inches: habit rather long: head longish: eyes rather prominent, and situated near each other at the upper part of the head: lower jaw rather longer than the upper: scales middle-sized: first dorsal fin dusky; the second, as well as the anal fin and tail, pale yellow spotted with brown: ventral fins plain. Native regions unknown.

PERCA. PERCH.

Generic Character.

Dentes acuti, incurvi.	*Teeth* sharp, incurvate.
Opercula triphylla, squamosa, serrata.	*Gill-covers* triphyllous, scaly, serrated.
Pinna dorsalis antice spinosa.	*Dorsal fin* spiny on the fore-part.
Squamæ (pluribus) duræ, asperæ.	*Scales* (in most species) hard and rough.

COMMON PERCH.

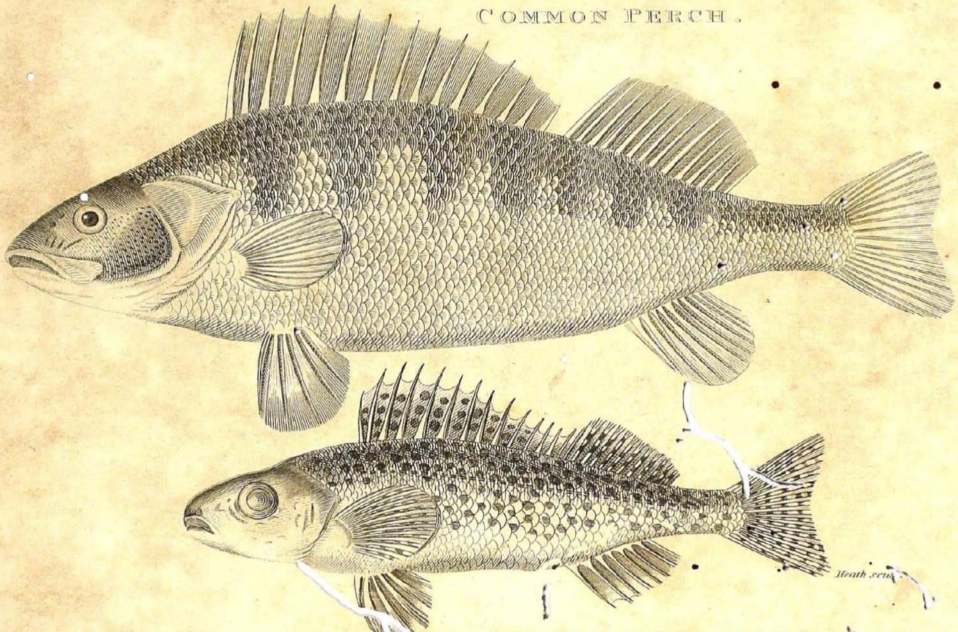
Perca Fluviatilis. *P. olivacea, fasciis utrinque transversis semidecurrentibus subnigris, pinna dorsali subviolacea, cæteris rubris.*

Olivaceous Perch, with transverse semidecurrent blackish bands, dorsal fin subviolaceous, the rest red.

Perca fluviatilis. *Lin. Bloch, &c.*

THE Perch is an inhabitant of clear rivers and lakes throughout almost all parts of Europe, arriving sometimes to a very large size, and to the weight of eight, nine, or ten pounds: its general size however is far smaller, usually measuring from ten or fifteen inches to two feet in length, and weighing from two to four pounds. The colour of the Perch is brownish olive, sometimes accompanied by a slight gilded tinge on the sides, and commonly marked by five or six moderately broad, blackish, transverse, semidecurrent bars: the dorsal fin is of a

COMMON PERCH.



RUFFE PERCH.

pale violet-brown, marked at the back of the spiny part by a roundish black spot accompanied by a smaller one: the rest of the fins, with the tail, are red. Sometimes this fish varies in colour, the olive assuming a richer cast of gilded green, and the dusky bars appearing more numerous, and of a blueish black. It is also occasionally observed to vary in having the back unusually elevated, and the hind part of the body, near the tail, distorted and curved downwards: this variety, if such it may be called, is commemorated by Mr. Pennant in the *British Zoology*, and it appears, from the *Fauna Suecica* of Linnæus that the same takes place in some parts of Sweden.

The Perch usually spawns in the early part of the spring, depositing a kind of extended bands of gluten, throughout which are disposed the ova in a sort of reticular direction. It is of a gregarious disposition, and is fond of frequenting deep holes in rivers which flow with a gentle current: it is extremely voracious, and bites eagerly at a bait: it is tenacious of life, and may be carried, according to Mr. Pennant, to the distance of sixty miles in dry straw, and yet survive the journey. It is one of those fishes which were held in repute at the tables of the ancient Romans, and is in general esteem at the present day, being considered as remarkably firm and delicate. In some of the Northern regions a species of isinglass is prepared from the skin.

SANDRE PERCH.

Perca Lucioperca. *P. griseo-argentea, fasciis dorsalibus numerosis transversis subfuscis, pinna dorsali maculata.*

Silvery-grey Perch, with numerous, transverse, dusky dorsal bands, and spotted dorsal fin.

Perca Lucioperca. *Lin. Bloch. t.* 51.

General length from one to two feet, but said sometimes to arrive at four feet: shape longer than in the preceding species, having something of the habit of a Pike, the head being rather produced, and the mouth furnished with large teeth: general colour silvery grey, deepest on the back, and with a pretty strong tinge of blue on the head and gill-covers: sides of the back marked by pretty numerous, slightly decurrent, blackish bands; dorsal fins by numerous dusky spots: pectoral fins reddish; the rest dusky. Native of clear rivers and lakes in the middle parts of Europe, and highly esteemed for the table: in general manners said to resemble the common Perch, but to be far less tenacious of life.

VAR.?

Perca Volgensis. *Lin. Gmel. Pall. it.* 1. *p.* 461.

General colour gilded olive, with five or six transverse semidecurrent blackish bands: dorsal fin banded in a similar manner: habit between that of the common Perch and the Sandre, for which reason

it has been sometimes considered as a hybrid fish between these two species: observed principally in the Volga and some other rivers opening into the Caspian Sea.

RUFFE PERCH.

Perca Cernua. *P. subolivacea, fusco-punctata, pinnæ dorsalis spinis quindecim.*

Subolivaceous Perch, speckled with black, with fifteen spines in the dorsal fin.

Perca cernua. *Lin. Bloch. &c.*

The Ruffe. *Penn. Brit. Zool.*

Length about six inches: shape more slender than that of the common Perch: head rather large, and somewhat flattened: teeth small: colour subolivaceous, with numerous dusky spots disposed over the body, dorsal, pectoral fins, and tail: abdomen whitish: native of many parts of Europe; chiefly frequenting clear rivers, assembling in large shoals, and keeping in the deepest part of the water.

WHITING PERCH.

Perca Alburnus. *P. subfusca, fasciis plurimis obliquis fuscis, radio primo pinnæ dorsalis spinoso.*

Pale-brown Perch, with numerous oblique dusky bands, and the first ray of the dorsal fin spiny.

Perca Alburnus. *Lin. Gmel.*

Native of the American seas.

ARABIAN PERCH.

Perca Arabica. *P. argentea, lineis longitudinalibus nigris, macula caudali viridi-aurea medio nigra.*

Silvery Perch, with longitudinal black lines, and tail marked by a green-gold spot with black middle.

Perca Arabica. *Lin. Gmel. Forsk. Arab.*

Teeth long, subulate, strait, and distant, three of which on each side are larger than the rest: at the bottom of the palate are also several small setaceous teeth: scales broad, lax, and deciduous, disposed in about ten rows on each side: tail slightly bifid, with pointed lobes: gill-covers scarce distinctly serrated: native of the Arabian seas.

LOPHAR PERCH.

Perca Lophar. *P. argentea, dorso olivaceo, pinnis ventralibus adnatis.*

Silvery Perch, with olivaceous back, and adnate ventral fins.

Perca Lophar. *Lin. Gmel. Forsk. Arab.*

Size and habit of a Herring: ventral fin united at the base and affixed by a membrane to the keel of the abdomen: tail forked, with the tips of the rays black: native of the Arabian seas.

NILOTIC PERCH.

Perca Nilotica. *P. fusca, pinnis dorsalibus subdistinctis, cauda integra.*
Brown Perch, with subdistinct dorsal fins, and entire tail.
Perca Nilotica. *Lin. Gmel.*

Native of the Nile, but has also been observed in the Caspian seas.

OCELLATED PERCH.

Perca Ocellata. *P. pinnis dorsalibus subunitis, ocello ad pinnæ caudæ basin. Lin. Gmel.*
Perch with subunited dorsal fins and an ocellate spot at the base of the tail.

First ray of the dorsal fin very short: tail marked on the upper part of the base by a black ocellated spot bordered with white. Native of the American seas.

SMALL PERCH.

Perca Pusilla. *P. rubro-argentea, scabra, ovata, compressa.*
Silvery-red, rough, ovate, compressed Perch.
Perca pusilla. *Lin. Gmel. Brunn. pisc. massil.*

An extremely small species, scarcely exceeding the length of an inch and half: back convex: scales small, pointed, and rough: head spiny: native of the Mediterranean.

ZINGEL PERCH.

Perca Zingel. *P. olivaceo-flavescens, elongata, supra fusco transversim fasciata, capite subacuminato-dilatato, maxilla superiore producta.*

Olivaceo-flavescent elongated Perch, with transverse brown bands above, dilated and subacuminated head, and lengthened upper jaw.

Perca Zingel. *Lin. Bloch.*

LENGTH twelve or fifteen inches: head flattened, and when viewed from above, of a heart-shaped, or rather triangular form; the sides bulging out very considerably, and then sloping into the obtuse point of the snout: eyes vertical, moderately distant, and furnished with red or golden-orange irides: scales middle-sized, hard and rough: tail slightly divided, with obtuse lobes. Inhabits the Danube and other rivers in Germany, and is in considerable esteem as a food: deposits its spawn in March and April: is tenacious of life, and may be easily transported to a considerable distance.

ZINGELIN PERCH.

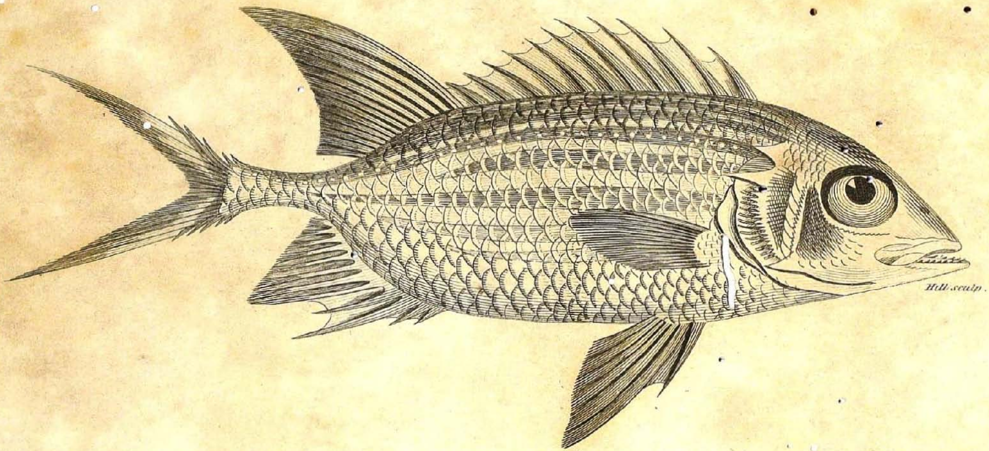
Perca Asper. *P. subolivacea, supra fusco transversim fasciata, capite dilatato-acuminato, pinna dorsali secunda radiis tredecim.*

Subolivaceous Perch, with transverse brown bands above, dilated and subacuminated head, and thirteen rays in the first dorsal fin.

Perca asper. *Lin. Bloch.*

EXTREMELY allied to the Zingel in general appearance, so that it might at first view be supposed

the same; but is much smaller, and of a somewhat darker colour: the second dorsal fin has but thirteen rays, whereas the former species has usually nineteen: the body gradually diminishes towards the tail, where it is very slender; and the tail is rather more forked than in the Zingel: the scales are middle-sized, hard, and rough: inhabits clear rivers in several parts of Germany, France, &c. and is much esteemed for the table. By some authors this species has been considered merely as a variety of the Zingel.



Hill sculp.

SOGO HOLOCENTRUS.

18[illegible] July 1. London Publish'd by G. Kearsley Fleet Street.

Generic Character.

Habitus generis Percæ.	*Habit* of the genus Perca.
Opercula squamosa, serrata, aculeata.	*Gill-covers* scaly, serrated, and aculeated.
Squamæ (pluribus) duræ, asperæ.	*Scales* (in most species) hard and rough.

With forked or lunated tail.

SOGO HOLOCENTRUS.

Holocentrus Sogo. *H. rubro-argenteus, lineis utrinque longitudinalibus flavis.*

Silvery red Holocentrus, with longitudinal yellow lines on each side.

Holocentrus Sogo. *Bloch.*

A HIGHLY beautiful species: general length about a foot: habit somewhat resembling that of a Carp, but of a squarer form, growing suddenly slender near the tail: eyes very large and gold-coloured: scales large and denticulated at the edges: tail very much forked. Native of the Mediterranean, Indian, and American seas, and considered as an excellent fish for the table.

SCHRAETSER HOLOCENTRUS.

Holocentrus Schraetser. *H. subfuscus, lineis utrinque quatuor longitudinalibus nigris, abdomine argenteo, capite nudo.*
Brownish Holocentrus, with four longitudinal black lines on each side; silvery abdomen, and naked head.
Gymnocephalus Schraetser. *Bloch.* Perca Schraetser. *Lin. Gmel.*

Length about ten inches: shape somewhat lengthened: head destitute of scales, for which reason this species is by Dr. Bloch arranged under a distinct genus by the name of *Gymnocephalus*: scales rather small than large: tail slightly divided: lowest of the longitudinal lines composed of a row of spots: dorsal fin spotted with black: native of the Danube and its tributary streams: in considerable esteem as an article of food.

RADULA HOLOCENTRUS.

Holocentrus Radula. *H. corpore punctis albis lineato.*
Holocentrus with the body lineated by white specks.
Perca Radula. *Lin. Gmel. Am. Acad.*

Dorsal fin very long: scales crenulated: native of India.

GATERINA HOLOCENTRUS.

Holocentrus Gaterina. *H. cærulescens, nigro-guttatus maculis sparsis.*
Blueish Holocentrus with black specks and scattered spots.
Sciæna Gaterina. *Lin. Gmel. Forsk. Arab.*

Length about three spans: pectoral and ventral fins yellow and unspotted: native of the Arabian seas, varying in size and colours.

GREENISH HOLOCENTRUS.

Holocentrus Virescens. *H. virescens, nebulis utrinque dorsalibus transversis semidecurrentibus olivaceis, capite flavo-striato.*
Greenish Holocentrus with transverse dorsal semidecurrent olivaceous bands, and head streaked with yellow.
Holocentrus virescens. *Bloch.*

Length about twelve inches: head and gill-covers marked by somewhat irregular longitudinal yellow streaks: eyes fulvous: scales middle-sized: tail slightly lunated. Native of the Indian seas.

FIVE-LINED HOLOCENTRUS.

Holocentrus Quinquelineatus. *H. subflavus dorso subfusco, corpore lineis utrinque quinque longitudinalibus cæruleis.*
Yellowish Holocentrus with brownish back, and body marked on each side by five longitudinal blue lines.
Holocentrus quinquelineatus. *Bloch.*

Length as in the preceding species: eyes rather large, and reddish: scales middle-sized: fins red, except the fore-part of the dorsal fin, which is pale-brown: tail slightly lunated. Native of Japan.

BENGAL HOLOCENTRUS.

Holocentrus Bengalensis. *H. subfulvus, subtus argenteus, supra fasciis utrinque longitudinalibus cærulescentibus nigro-marginatis.*

Subfulvous Holocentrus, silvery beneath, and marked on each side the upper part by five longitudinal blueish bands margined with black.

Length about six inches: scales middle-sized: eyes rather large: fins pale: tail slightly lunated. Native of Bengal.

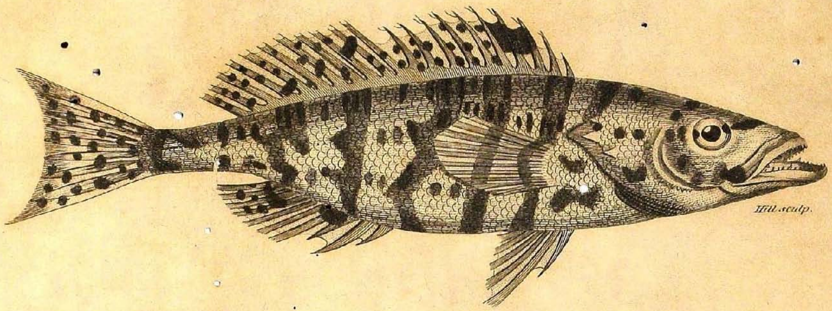
TIGRINE HOLOCENTRUS.

Holocentrus Tigrinus. *H. albus, corpore fasciis transversis, pinnis maculis fuscis.*

White Holocentrus, with the body transversely banded and fins spotted with black.

Holocentrus Tigrinus. *Bloch.*

Length a foot: colour subargenteous white: variegations deep-brown: head shaped somewhat like that of a Pike; scales rather small: tail slightly lunated: native of the Indian seas: esteemed for the table.



TIGRINE HOLOCENTRUS.

1803. July 1. London. Publish'd by G. Kearsley. Fleet Street.

DECUSSATED HOLOCENTRUS.

Holocentrus Decussatus. *H. albus, dorso fusco, corpore fasciis duabus longitudinalibus septemque transversis fuscis.*
White Holocentrus, with brown back, and body marked by two longitudinal and seven transverse brown bars.
Epinephelus striatus. *Bloch.*

Length about twelve inches: back dusky brown; sides marked by two longitudinal brown stripes from the gills to the tail, and by seven transverse ones, each continued to some little distance into the dorsal fin, which is white or pale: scales middle-sized: eyes blue: tail brown, and slightly lunated. Native of the American seas: referred by Bloch to a distinct genus, under the title of *Epinephelus*; the eyes of this, as well as of some other species, appearing covered with the common skin, as in the Murænæ, &c.

STRIATED HOLOCENTRUS.

Holocentrus Striatus. *A. subluteus, dorso subfusco, corpore fasciis transversis fuscis, pinna dorsali postice ramentacea macula nigra.*
Subluteous Holocentrus, with brownish back, body marked by transverse brown bands, dorsal fin ramentose behind and marked by a black spot.
Holocentrus Striatus. *Bloch.*

Length about six inches: scales middle-sized: exterior gill-covers sharp-pointed: eyes large: fins, except the ventral, pale: tail nearly strait, or but very slightly lunated: native regions unknown.

ARGENTINE HOLOCENTRUS.

Holocentrus Argentinus. *H. subfuscus, lateribus argenteis.*
Brownish Holocentrus with silvery sides.
Holocentrus argentinus. *Bloch.*

LENGTH about five inches: second lamina of the gill-covers marked by three short spines: eyes rather large: scales small: fins pale, with the rays bifid and continued a little beyond the membrane: tail very nearly strait, or scarce perceptibly lunated, so that it might rank with nearly equal propriety under either division of the genus. Native regions unknown.

BLACK HOLOCENTRUS.

Holocentrus Niger. *H. niger, squamis minutissimis.*
Black Holocentrus with extremely minute scales.
Black-Fish. *Penn. Brit. Zool.* *Borl. Cornw. t.* 25. *f.* 8.

SAID to resemble the *Perca cernua*, of which it has even been sometimes considered as a variety: length fifteen inches: head somewhat like that of a trout: teeth very small: dorsal fin reaching far down the back: tail forked: described by Ray, Pennant, &c. on the authority of Mr. Jago: found about the coast of Cornwall.

ACERINE HOLOCENTRUS.

Holocentrus Acerinus. *H. pinnæ dorsalis radiis* 31, *spinis* 17.
Holocentrus with fourteen soft and seventeen spiny rays in the dorsal fin.
Perca acerina. *Lin. Gmel.*

In general appearance allied to the *Perca cernua*, but differs in having a larger head, and in the number of rays in the fins. Native of the Euxine sea: in esteem as an edible fish.

BLUEISH HOLOCENTRUS.

Holocentrus Cærulescens. *H. cærulescens, pinnis omnibus flavis.*
Blueish Holocentrus, with all the fins yellow.
Holocentrus flavo-cæruleus. *Cepede.*

Native of the Indian seas: observed by Commerson.

With undivided or rounded tails.

VARIEGATED HOLOCENTRUS.

Holocentrus Variegatus. *H. ruber, lineis septem transversis nigris, capite abdomineque lituris cæruleis variato.*
Red Holocentrus, with seven transverse black lines, and the head and abdomen varied with blue streaks.
Perca marina. *Lin. Gmel.*

Native of the Mediterranean and Northern seas.

COTTOID HOLOCENTRUS.

Holocentrus Cottoides. *H. pinnis omnibus lineis duabus punctatis. Lin. Gmel. Mus. Ad. Frid.*

Holocentrus with all the fins marked by two speckled lines.

Body marked with roundish brown spots: native of the Indian seas.

PHILADELPHIC HOLOCENTRUS.

Holocentrus Philadelphicus. *H. fasciis maculisque transversis nigris, subtus rubens, pinna dorsali macula media nigra.*
Perca Philadelphica. *Lin. Gmel.*

Native of the American seas: observed by Dr. Garden.

GREAT HOLOCENTRUS.

Holocentrus Gigas. *H. ochraceus fusco-nebulosus, operculis trispinosis, spinis dorsalibus undecim.*
Ochraceous Holocentrus, with brown clouds, three-spined gill-covers, and eleven dorsal spines.
Perca gigas. *Lin. Gmel.*

Length three feet: shape ovate: body compressed: mouth large: eyes yellow: teeth sharp and in several rows: dorsal fin ramentose, with eleven spiny and fifteen soft rays. Native of the Mediterranean.

FORSKAL'S HOLOCENTRUS.

Holocentrus Forskalii. *H. ruber, fasciis transversis latis subalbidis quaternis.*

Red Holocentrus, with four broad transverse whitish bands.

Perca fasciata. *Lin. Gmel.*

Size considerable: scales small: head large: eyes large, with two longitudinal furrows between them: pectoral fins slightly pedunculated, and almost connected by a membrane. Native of the Red Sea: observed by Forskal.

TAUVIN HOLOCENTRUS.

Holocentrus Tauvinus. *H. lineari-oblongus fuscus, guttis ferrugineo-nigris.*

Linear-oblong Holocentrus, with blackish-ferruginous spots.

Perca Tauvina. *Lin. Gmel.*

Head cuneated and sloping: lips obtuse: the upper retractile: scales small: fins dusky ferruginous, with darker-coloured spots. Native of the Arabian seas.

ONGO HOLOCENTRUS.

Holocentrus Ongo. *H. fuscus, corpore maculis elongatis transversim notato, pinnis dorsali caudali analique flavo-guttatis.*

Brown Holocentrus, with the body marked transversely by elongated spots, and the dorsal, anal, and caudal fins spotted with yellow.

Holocentrus Ongo. *Bloch.*

Native of Japan where it is known by the name of *Ongo.*

GOLDEN HOLOCENTRUS.

Holocentrus Auratus. *H. luteus, rubro-punctulatus.*
Gold-yellow Holocentrus, with red specks.
Holocentrus auratus. *Bloch.*

Native of the East Indies.

FOUR-LINED HOLOCENTRUS.

Holocentrus Quadrilineatus. *H. argenteus, dorso subfusco, corpore supra lineis utrinque quatuor longitudinalibus nigris.*
Silvery Holocentrus, with brownish back, and body marked above by four longitudinal black lines on each side.
Holocentrus quadrilineatus. *Bloch.*

Length about five inches: scales small: spiny part of the dorsal fin marked on the edge by a black patch. Native of the East Indies.

FASCIATED HOLOCENTRUS.

Holocentrus Fasciatus. *H. subviridi-flavescens fasciis transversis fuscis subtus bifidis.*
Green-yellowish Holocentrus with transverse brown bands divided beneath.
Holocentrus fasciatus. *Bloch.*

Length twelve inches: shape rather lengthened: head somewhat like that of a Pike: scales middle-sized: bands of the body continued through the dorsal fin: rest of the fins and tail plain, and of a pale colour. Native region unknown.

PUNCTATED HOLOCENTRUS.

Holocentrus Punctatus. *H. flavus, guttis nigris punctisque rubris aspersus.*

Yellow Holocentrus, sprinkled over with black spots and red points.

Holocentrus punctatus. *Bloch.*

Size and habit of the *Atlantic Sparus (Perca maculata, Bloch.)*: colour pale yellow, marked on all parts with numerous small round black spots, with smaller red ones interspersed: fins and tail strongly tinged with red. Native of the Brasilian seas.

SPUR-GILLED HOLOCENTRUS.

Holocentrus Calcarifer. *H. subargenteus dorso subfusco, squamis magnis, operculis calcaratis.*

Subargenteous Holocentrus, with brownish back, large scales, and spurred gill-covers.

Holocentrus calcarifer. *Bloch.*

Length about a foot: habit that of a Carp, but rather more lengthened in proportion: body marked by dusky lines along each row of scales: anterior gill-covers furnished with four strong sharp spines, so placed as to bear some resemblance to the rowel of a spur: posterior gill-covers armed with a single spine: fins and tail marked across the rays by brown spotted streaks. Native of Japan.

SURINAM HOLOCENTRUS.

Holocentrus Surinamensis. *H. subfuscus, nebulis sublutcis, capite rubro, operculis anterioribus ciliato-spinosis.*
Brownish Holocentrus, with subluteous clouds, red head, and anterior gill-covers spine-ciliated.
Holocentrus Surinamensis. *Bloch.*

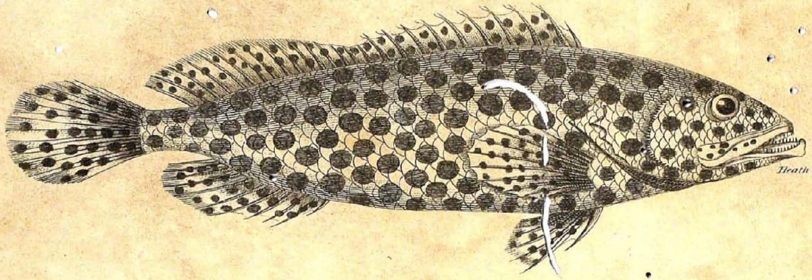
Length twelve inches: habit of a Carp: general colour brown, with several large, roundish, obscurely-yellow patches on each side; the scales on the brown parts being each marked by a white speck: head and gill-covers red: mouth small: dorsal fin scaly at the base of the back-part: tail crossed near the base by a brown bar. Native of Surinam, where it is highly esteemed for the table, being considered as one of the best fishes which the country produces.

AFRICAN HOLOCENTRUS.

Holocentrus Afer. *H. oblongo-ovatus fuscus, squamis parvis, cauda brevi.*
Oblong-ovate brown Holocentrus, with small scales and short tail.
Holocentrus Afer. *Bloch.*

Length twelve inches: outline of the body, exclusive of the fins, somewhat resembling that of a Sole: thickness considerable: scales very small, but those on the posterior gill-covers considerably larger than the rest: dorsal fin covered with small

82.



MERRA HOLOCENTRUS.

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scales, and furnished on the fore-part with extremely thick or strong spines: back-part and anal fin rounded, and reaching to within a little distance of the tail, which is remarkably small for the size of the fish, and of a round shape: pectoral fins whitish: ventral pale red: native of the coasts of Guinea, feeding on marine insects, &c. and in considerable estimation as a food.

JAPANESE HOLOCENTRUS.

Holocentrus Japonicus. *H. ruber, squamis parvis, iridibus cæruleis flavisque.*
Red Holocentrus, with small scales and blue and yellow irides.
Epinephelus ruber. *Bloch.*

Size of a Perch: scales small: eyes furnished with a double iris, the first or neaerst the pupil being yellow, and the second blue: abdomen and spiny part of the dorsal fin of a paler colour than the other parts of the fish: native of Japan.

MERRA HOLOCENTRUS.

Holocentrus Merra. *H. albus, undique fusco-maculatus.*
White Holocentrus, spotted on all parts with brown.
Epinephelus Merra. *Bloch.*

Size and habit of a Trout: scales small: body very thickly marked with middle-sized, subhexagonal, deep-brown spots; those on the head and towards the tail smaller than the rest: fins and tail marked with very numerous spots also: native of the Japanese seas.

TORTOISE-SHELL HOLOCENTRUS.

Holocentrus Testudineus. *H. subluteus, fasciis transversis subramosis fuscis, operculis cæruleo fasciatis, pinnis nigricantibus.*
Subluteous Holocentrus, with slightly branching brown bands, blue-striped gill-covers, and blackish fins.
Epinephelus bruneus. *Bloch.*

LENGTH about six inches: shape rather lengthened: scales middle-sized: mouth wide: fins marked by a pair of dusky bars towards their base, and deepening into blackness towards their edges: dorsal fin scaly at the base. Native of the Northern seas.

MARGINED HOLOCENTRUS.

Holocentrus Marginatus. *H. cærulescens, dorso subfusco, pinnis rubris, dorsali antice nigro-marginato.*
Blueish Holocentrus, with brownish back, red fins, and dorsal fin edged on the fore-part with black.
Epinephelus marginalis. *Bloch.*

SIZE of a small Perch: scales rather small: eyes yellow: mouth wide. Native region unknown.

SONNERAT'S HOLOCENTRUS.

Holocentrus Sonneratii. *H. subflavus, fasciis tribus transversis argenteis fusco-marginatis.*

Yellowish Holocentrus, with three transverse silvery bands edged with brown.

Holocentrus Sonneratii. *Cepede.*

NATIVE of the Indian seas: mentioned by Cepede from Sonnerat.

LANCEOLATE HOLOCENTRUS.

Holocentrus Lanceolatus. *H. argenteus, fusco transversim fasciatus, pinnis dorsali anali caudalique apice sublanceolatis.*

Silvery Holocentrus, transversely banded with brown, and with the dorsal, anal, and caudal fins sublanceolate.

Holocentrus lanceolatus. *Bloch.*

SIZE of a small Perch: allied in some degree to the Chætodons: scales extremely small: pectoral fins and tail marked by a few black spots: tail slightly inclining to a lanceolate shape: native of the East Indies.

BLUE-SPOTTED HOLOCENTRUS.

Holocentrus Cæruleo-punctatus. *H. albido-cærulescens, flavo-nebulosus, pinnis fuscis cæruleo-maculatis.*

Blueish Holocentrus, with pale-yellow clouds, and deep-brown fins spotted with blue.

Holocentrus cæruleo-punctatus. *Bloch.*

LENGTH about three inches and a half: body whitish, slightly clouded with pale blue: fins and tail deep brown, with numerous round blue spots: scales extremely small. Native country unknown.

PIED HOLOCENTRUS.

Holocentrus Bicolor. *H. nigricans, maculis transversis irregularibus albis.*

Blackish Holocentrus, with irregular white spots.

Holocentrus maculatus.

A VERY small species: length about three inches: colour deep blackish brown, marked by three or four interrupted white bands or patches: tail marked by a white bar: scales as in the two preceding species.

BODIANUS. BODIAN.

Generic Character.

Habitus Percæ.	*Habit* of the genus Perca.
Opercula squamosa, serrata, aculeata.	*Gill-covers* scaly, serrated, and aculeated.
Squamæ (pluribus) læves.	*Scales* (in most species) smooth.

With divided or forked tails.

PURPLE-BACKED BODIAN.

Bodianus Bodianus. *B. luteus, dorso purpureo.*
Gold-yellow Bodian, with purple back.
Bodianus Bodianus. *Bloch.*

LENGTH about fourteen inches: shape somewhat like that of a trout: colour yellow, each scale being deeply edged or tipped with orange colour: back purplish rose-colour, with the scales tipped with blue: fins lanceolate: tail nearly even in the middle, but running into a lanceolate tip at each side. Native of the South American seas.

FIVE-SPINED BODIAN.

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FIVE-SPINED BODIAN.

Bodianus Pentacanthus. *B. roseus, abdomine argenteo, pinna dorsali antice flava.*

Rose-coloured Bodian, with silvery abdomen, and dorsal fin yellow on the fore-part.

Bodianus pentacanthus. *Bloch.*

Length about thirteen inches: shape nearly as in the preceding, but rather more slender: colour beautiful deep rose, with a silvery cast on the abdomen: fore-part of the dorsal fin yellow; remainder, together with the rest of the fins, deep rose: tail deeply forked, the upper lobe stretching beyond the lower: anterior gill-covers armed with five strong spines: native of the Brasilian seas, and in considerable esteem as a food.

AYA BODIAN.

Bodianus Aya. *B. ruber, abdomine argenteo, operculis unispinosis, cauda lunata.*

Red Bodian, with silvery abdomen, single-spined gill-covers, and lunated tail.

Bodianus Aya. *Bloch.*

A highly beautiful species: size and habit of a Carp: colour bright red, with silvery abdomen, and most of the scales on the body edged with silver: back blood-red: dorsal fin rounded at the tip: tail lunated: scales middle sized: eyes red. Native of the Brasilian seas, and in much esteem as a food: said to grow to the length of three feet.

LARGE-SCALED BODIAN.

Bodianus Macrolepidotus. *B. griseo-fuscus, squamis magnis rotundatis, margine denticulatis.*

Grey-brown Bodian, with large rounded scales denticulated at the edges.

Bodianus macrolepidotus. *Bloch.*

Length about a foot: shape moderately broad: mouth small: scales very large, with pale edges: eyes large and yellow: pectoral and ventral fins pale yellow; the rest brown: tail slightly forked. Native of the East Indies.

SPOTTED BODIAN.

Bodianus Maculatus. *B. olivaceo-flavescens, cæruleo-maculatus, pinnis subrubentibus.*

Olivaceous-yellow Bodian, with blue spots, and reddish fins.

Bodianus maculatus. *Bloch.*

Length about a foot: shape like that of a Trout: head rather large and short: scales small: head, body, fins, and tail, marked by numerous smallish blue spots edged with black: tail slightly lunated. Native of Japan.

LOUTI BODIAN.

Bodianus Louti. *B. oblongo-lanceolatus miniatus, guttis violaceis, pinnis margine flavis.*

Oblong-lanceolate Bodian, with smallish violaceous spots, and fins edged with yellow.

Perca Louti. *Lin. Gmel. Forsk. Arab.*

Length between two and three feet: eyes red: teeth setaceous and flexile, with some stronger conical ones intermixed: tail linear, and bifalcate. Native of the Arabian seas: observed by Forskal.

PALPEBRAL BODIAN.

Bodianus Palpebratus. *B. spadiceus, oculis ochraceis valvula libera flavescente munitis.*

Subferruginous Bodian, with ochre-coloured eyes, guarded by a moveable yellow valve.

Sparus palpebratus. *Lin. Gmel. Pall. nord. beytr.* 2.

Shape resembling that of a Perch, but the head more obtuse: length a few inches: eyes guarded externally by an oval moveable yellow valve or cover, attached by the anterior extremity: native of the seas about Amboyna.

SILVERY BODIAN.

Bodianus Argenteus. *B. argenteus, dorso subcærulescente.*
Silvery Bodian, with blueish back.
Bodianus argenteus. *Bloch.*

Length about six inches: shape like that of a Herring: scales middle sized: fins slightly tinged with yellow: tail pretty deeply forked: native of the Mediterranean.

With even, or rounded tail.

APUA BODIAN.

Bodianus Apua. *B. ruber, dorso maculis, corpore punctis nigris, pinnis nigro marginatis.*
Red Bodian, with the back spotted, the body specked, and the fins edged with black.
Bodianus Apua. *Bloch.*

Length twelve or fourteen inches: habit that of a Carp: colour blood-red, with a silvery cast towards the abdomen: scales middle-sized: spiny rays of the dorsal fin extremely strong: eyes red: tail nearly even, or but very slightly rounded: native of the Brasilian seas.

GUTTATED BODIAN.

Bodianus Guttatus. *B. fusco-flavescens, corpore pinnisque guttis ocellatis fuscis.*

Yellowish-brown Bodian, with body and fins marked by small ocellated deep-brown spots.

Bodianus guttatus. *Bloch.* Jacob Evertsen. *Ray.*

Length about a foot: scales rather small than large: whole fish pretty thickly sprinkled with small round deep-brown spots, of which those towards the back, tips of the fins, and tail, are marked with a pale central spot: tail rounded. Native of the Indian and American seas, and in the latter known to the English by the name of the *Jew-Fish* or *Jacob Evertsen*: in considerable esteem as an edible fish.

ZEBRA BODIAN.

Bodianus Zebra. *B. subluteus, corpore fasciis transversis, capite longitudinalibus fuscis.*

Subluteous Bodian, with the body marked by transverse and the head by longitudinal brown bands.

Bodianus Boenack. *Bloch.*

Length about ten inches: breadth moderate: colour dull luteous, paler beneath: body crossed by about seven brown bands, continued into the dorsal fin: head marked by three or four longitudinal stripes: tail rounded, and crossed towards the base by a brown band: eyes pale yellow: scales rather small than large: native of Japan, where it is known by the name of *Boenack*.

ROGAA BODIAN.

Bodianus Rogaa. *B. nigro-rufescens, pinnis nigris.*
Blackish-rufescent Bodian, with black fins.
Perca Rogaa. *Lin. Gmel. Forsk. Arab.*

LENGTH about three spans: lips broad, and very obtuse: teeth very numerous, setaceous, and often accompanied by two strong conic-subulate front-teeth: dorsal fin ramentose: tail even: native of the Arabian seas: observed by Forskal.

LUNATED BODIAN.

Bodianus Lunulatus. *B. nigro-ferrugineus, pinnis nigris ponc hyalino-albis.*
Blackish-ferruginous Bodian, with black fins, whitish-transparent towards the back-part.
Perca lunaria. *Lin. Gmel. Forsk. Arab.*

ALLIED to the *Rogaa* Bodian: anal and dorsal fins marked towards the edge by a dull reddish band, and afterwards by a whitish subtransparent one: tail marked by a pale crescent, and tipped with dull rufous. Native of the Arabian seas: observed by Forskal.

BLACK-AND-WHITE BODIAN.

Bodianus Melanoleucos. *B. argenteus, fasciis transversis, irregularibus, nigris.*
Silvery Bodian, with irregular, transverse, black bands.
Bodianus melanoleucos. *Cepede.*

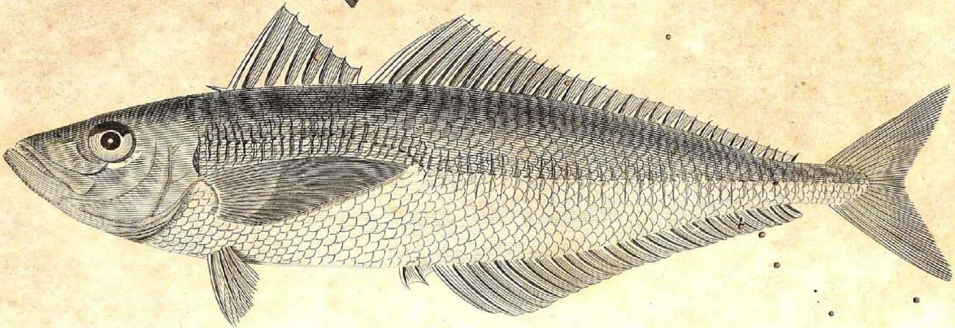
Length, according to Cepede, four or five decimetres: shape lengthened: mouth and fins yellow: pectoral and ventral fins marked at the base by a black spot: teeth unequal, and in several rows: palate also beset in one part with small teeth. Observed by Commerson in the Indian seas.

STAR-EYED BODIAN.

Bodianus Stellifer. *B. argenteus, dorso subluteo, orbitis subtus spinosis.*
Silvery Bodian, with subluteous back, and orbits spiny beneath.
Bodianus stellifer. *Bloch.*

A small species: length about five inches and a half: shape somewhat like that of a small Tench, but rather longer: head short and obtuse: scales middle sized: orbits denticulated beneath in such a manner as to appear furnished with a series of small short spiny processes: tail oblong-rounded. Native of the seas about the Cape of Good Hope.

COMMON MACKREL.



Heath sculp.

SCAD MACKREL.

1803 July 1 London Publish'd by G. Kearsley Fleet Street.

SCOMBER. MACKREL.

Generic Character.

Corpus oblongum, læve, linea laterali interdum carinatum.	*Body* oblong, smooth, sometimes carinated by the lateral line.
Pinnulæ sæpius supra infraque versus caudam.	*Finlets* (in most species) above and below, towards the tail.

COMMON MACKREL.

Scomber Scomber. *S. cæruleus, lineis numerosis transversis nigris, abdomine argenteo, pinnulis supra infraque quinque.*

Blue Mackrel, with numerous transverse black lines, silvery abdomen, and five finlets above and below.

Scomber. *Pliny.* Scomber Scomber. *Lin. Bloch. t.* 54.

Common Mackrel. *Penn. Brit. Zool. Will. ichth. &c. &c.*

THIS beautiful fish is a native of the European and American seas; generally appearing at stated seasons, and swarming, in vast shoals, round particular coasts. Its great resort however seems to be within the Arctic circle, where it resides in innumerable troops, grows to a larger size than elsewhere, and is supposed to find its favourite food, consisting chiefly of marine insects, in far greater plenty than in warmer latitudes. During the severity of the northern winter it is said to lie im-

bedded in the soft mud, beneath the vast crusts of ice surrounding the polar coasts; being thus sufficiently protected from the effects of frost; and, on the return of spring, is generally believed to migrate in enormous shoals, of many miles in length and breadth, and to visit the coasts of more temperate climates in order to deposit its spawn. Its route has been supposed nearly similar to that of the Herring; passing between Iceland and Norway, and proceeding towards the northern part of our own island, where a part throws itself off into the Baltic, while the grand column passes downwards, and enters the Mediterranean through the straits of Gibraltar.

This long migration of the Mackrel, as well as of the Herring, seems at present to be greatly called in question: and it is thought more probable that the shoals which appear in such abundance round the more temperate European coasts, in reality reside during the winter at no very great distance; immersing themselves in the soft bottom, and remaining in a state of torpidity *; from which they are awakened by the warmth of the returning spring, and gradually recover their former activity. At their first appearance their eyes are observed to

* Of this the Count de Cepede adduces the testimony of an eye-witness; viz. *Monsr. Pleville-le-Peley*, who, about the coasts of Hudson's bay, observed the mud, at the bottom of the small clear hollows encrusted with ice round those coasts, entirely bristled over by the tails of Mackrels imbedded in it nearly three parts of their length.

appear remarkably dim, as if covered with a kind of film, which passes off as the season advances, when they appear in their full perfection of colour and vigor.

The general length of the Mackrel is from twelve to fifteen or sixteen inches; but in the northern seas it is occasionally found of far greater size, and among those which visit our own coasts instances sometimes occur of specimens far exceeding the general size of the rest. The colour of this fish, on the upper parts, as far as the lateral line, is a rich, deep blue, accompanied by a varying tinge of green, and marked by numerous black transverse streaks, which in the male are nearly strait, but in the female beautifully undulated: the jaws, gill-covers, and abdomen, are of a bright silver-colour, with a slight varying cast of gold-green along the sides, which are generally marked in the direction of the lateral line by a row of long dusky spots: the scales are very small, oval, and transparent: the pinnules or spurious fins are small, and are five in number both above and below. The shape of the Mackrel is highly elegant, and it is justly considered as one of the most beautiful of the European fishes. Its merit as an article of food is universally established, and it is one of those fishes which have maintained their reputation through a long succession of ages; having been highly esteemed by the ancients, who prepared from it the particular condiment or sauce known to the Romans by the title of *Garum*, and made by salting the fish, and

after a certain period, straining the liquor from it. This preparation, once so famous, has been long superseded by the introduction of the Anchovy for similar purposes.

COLY MACKREL.

Scomber Colias. *S. læte viridis et azureus. Lin. Gmel. Cetti pesc. &c. Sardin. p.* 196.
Bright-green Mackrel varied with blue.
Colias. *Aldr. Gesn. Will. &c.*

This is said to be extremely allied to the common Mackrel, but somewhat smaller, and is occasionally observed about the coasts of Sardinia.

JAPANESE MACKREL.

Scomber Japonicus. *S. cœrulescens, pinnulis quinque spuriis. Lin. Gmel. Houttuyn Act. Haarl.* 20.
Blueish Mackrel, with five spurious fins.

This also is so nearly allied to the common Mackrel, that it may be doubted whether it be a truly distinct species. It is said to be about eight inches long; shaped like a Herring, with silvery head, small scales, and ciliated or denticulated mandibles. Native of the Japanese sea.

GILDED MACKREL.

Scomber Auratus. *S. aureus, pinnulis spuriis quinque. Lin. Gmel. Houtuyn Act. Haarl.* 20.
Gold-coloured Mackrel, with five spurious fins.

MUCH allied to the preceding, as well as to the common Mackrel, but differs in colour, as well as in the number of rays in the anal fin, which amounts to six only. Native of the Japanese sea.

TUNNY.

Scomber Thynnus. *S. fusco-cærulescens, abdomine argenteo, pinnulis supra infraque subdenis flavis.*
Dusky-blueish Mackrel, with silvery abdomen, and about ten yellow finlets above and below.
Scomber Thynnus. *Lin. Bloch.*
Thynnus. *Plin. l.* 9. c. 15. Coretta alba Pisonis. *Will.*
Tunny. *Penn. Brit. Zool.* 3.

THE Tunny is a very large species, growing to the length of eight, or even ten feet, but much more commonly seen of about the length of two feet. It is an inhabitant of the Mediterranean, Northern, Indian, and American seas, and is of a gregarious nature, frequently assembling in large shoals. It is an animal of great strength and fierceness, preying on all kinds of smaller fishes, and is said to be the peculiar persecutor of the Mackrel and the Flying-Fish. Its flesh, though rather coarse, was much esteemed by the ancient Greeks and Romans, who established their Tunny-Fisheries as in modern

times, on many parts of the Mediterranean coasts, where this fish still continues to be taken in great plenty, more especially round the island of Sicily. In the British seas it is rarely observed in shoals; the individuals which occur being rather considered as accidental stragglers. Mr. Pennant records an instance of one which he saw on the northern coasts of Scotland, weighing 460 pounds, and measuring seven feet ten inches in length. Much larger specimens however are occasionally taken in the Sicilian sea. In the Indian ocean this species is said to be seen of an enormous size, and to assemble in vast shoals. Pliny pretends that the fleet of Alexander the Great was impeded in its progress by a shoal of Tunnies, so strongly wedged together that he found it necessary to dispose his ships into battle array, in order to force through the opposing phalanx of fishes *.

The Tunny-Fishery is of equal importance to the inhabitants of the Mediterranean coasts as the Herring-Fishery to those of the more northern parts of Europe. The smaller fishes are chiefly sold fresh, while the larger are cut in pieces and salted, and barrelled up for sale.

The general colour of the Tunny is a dark or dull blue on the upper parts, and silvery with a cast of flesh-colour on the sides and abdomen: the first dorsal fin and the tail deep grey, the second, together with the pectoral, ventral, anal, and spurious fins yellow: the pectoral fins are of a lanceolate

* *Plin. lib.* 9. *cap.* 3.

shape, and the tail pretty strongly lunated: the finlets or spurious fins appear to vary in number in different specimens, and consequently can afford no very certain specific mark. In the specimen observed by Mr. Pennant the number was eleven above, and nine below. In the Gmelinian edition of the Systema Naturæ, as well as in the preceding one by Linnæus himself, the number is said to be eight both above and below.

THAZARD MACKREL.

Scomber Regalis. *S. supra cæruleus, subtus argenteus, lateribus flavo striato-maculatis.*

Mackrel with the body blueish above, silvery below, and the sides striped and spotted with yellow.

Scomber regalis. *Bloch.* Scomber Thazard. *Cepede.*

Allied to the Tunny in general form, but of a rather more slender shape: size sometimes nearly equal to that of the Tunny: colour blueish brown on the back, and silvery on the sides and abdomen: along each side runs a longitudinal yellow stripe or band, accompanied both above and below by a series of oval or lengthened spots of the same colour: fins yellow: the pectoral ones rather small and short: tail strongly forked or lunated, and furnished, as in the Tunny, on each side the base, with a small semi-coriaceous process: finlets eight above and seven below. Native of the American seas, and in considerable esteem as a food.

GERMON MACKREL.

Scomber Germon. *S. cæruleus, abdomine argenteo, pinnis pectoralibus elongatis, pinnulis supra infraque novem.*

Blue Mackrel, with silvery abdomen, elongated pectoral fins, and nine finlets both above and below.

Scomber Germon. *Cepede.*

General size that of a small Tunny: colour blackish blue on the back, bright blue on the sides, and silvery on the abdomen: on several individuals are seen a few slight traces of transverse blue bands, which disappear as soon as the fish expires, and sometimes even immediately on taking out of the water: body and tail covered with small pentagonal, or rather rounded scales. Native of the Indian seas: observed by Commerson.

SARDA MACKREL.

Scomber Sarda. *S. argenteus, supra fasciis numerosis transversis fuscis.*

Silvery Mackrel, marked above by numerous transverse brown bands.

Scomber Sarda. *Bloch.*

Shape as in the preceding: length about two feet: colour bright silvery; the back blueish, and marked on each side, as in the Mackrel, with pretty numerous, short, transverse, brown bars: dorsal fins and tail dusky; the latter strongly forked: upper part of the body, from the head to a small distance beyond the base of the pectoral fins, covered by small

scales; the remainder of the fish presenting only the appearance of a smooth, silvery skin: finlets seven above, and six below: on each side the base of the tail a projecting lamina, as in the preceding kinds: native of the Mediterranean, and in some esteem as a food.

SALIENT MACKREL.

Scomber Saliens. *S. argenteus, dorso viridi-cæruleo, spinis quatuor armato, pinnulis supra infraque octo.*

Silvery Mackrel, with blue-green back armed with four spines, and eight pinnules above and below.

Scomber saliens. *Bloch.*

Similar in shape to the Tunny: length about eighteen inches: colour darkish blue on the back, and silvery on the sides and abdomen: fins pale, with a yellowish cast: tail dusky, and strongly forked: before the dorsal fin four very strong separate spines: a single spine at the base of each pectoral fin, and two very strong separate ones before the ventral fin: finlets eight both above and below: lateral line pretty strongly marked: no projecting lamina on each side the base of the tail: native of the American seas: is a strong fish, swimming rapidly, and occasionally springing with considerable force out of the water, and escaping out of the nets thrown for it: in considerable esteem as a food.

PILOT MACKREL.

Scomber Ductor. *S. argenteo-cærulescens, fasciis quatuor transversis cæruleis, spinis dorsalibus quatuor, cauda nigro-fasciata.*
Silvery-blueish Mackrel, with four transverse blue bands, four dorsal spines, and tail barred with black.
Scomber Ductor. *Bloch.* Gasterosteus Ductor. *Lin.*

General shape that of a Tunny, but with a much blunter or shorter head: length about eighteen inches: colour blue above, and silvery on the sides and abdomen: scales small: body crossed by four broad blue bands, the first commencing at some distance beyond the gills, and the last crossing the extremity of the body: tail strongly forked, each lobe marked obliquely by a broad black band: dorsal fin single, pale, commencing at a considerable distance from the head, and reaching nearly to the tail: before its commencement are situated four strong, short, separate spines: anal fin pale, and continued nearly to the tail: on each side the base a projecting lamina with serrated edges; but no finlets either above or below: native of the American and Indian seas: often observed swimming near or before sharks, and hence sometimes called by the name of the Pilot.

ZEBRA MACKREL.

Scomber Zebra. *S. subargenteus, dorso subfusco, corpore fasciis transversis angustis subduplicatis fuscis.*

Subargenteous Mackrel, with brownish back, and body marked by narrow transverse subduplicate brown bands.

Scomber fasciatus. *Bloch.*

Shape that of a Carp: length about a foot: bands of the body continued nearly through the dorsal and anal fin: from eye to eye a brown crescent over the head: first dorsal fin small: the second continued nearly to the tail, which is strongly forked: no finlets or lateral lamina: lateral line pretty distinct, especially towards the tail, where it is minutely subloricated. Native regions unknown.

TOOTHLESS MACKREL.

Scomber Edentulus. *S. argenteus dorso subfusco, corpore supra fasciis transversis subbifidis semi-decurrentibus fuscis.*

Silvery Mackrel, with brownish back, and body marked above by transverse, subbifid, semidecurrent, brown bands.

Scomber edentulus. *Bloch.*

Length about twelve inches: habit broad, and almost approaching to subrhomboid, as in some of the Spari, &c. mouth small and without visible teeth: first rays of the dorsal fin excessively strong, the remainder suddenly growing shallower, and continuing nearly to the tail, appearing as if composed of united finlets: anal fin of similar aspect: tail strongly forked. Native of the Indian seas, and much esteemed for the table.

BONITO MACKREL.

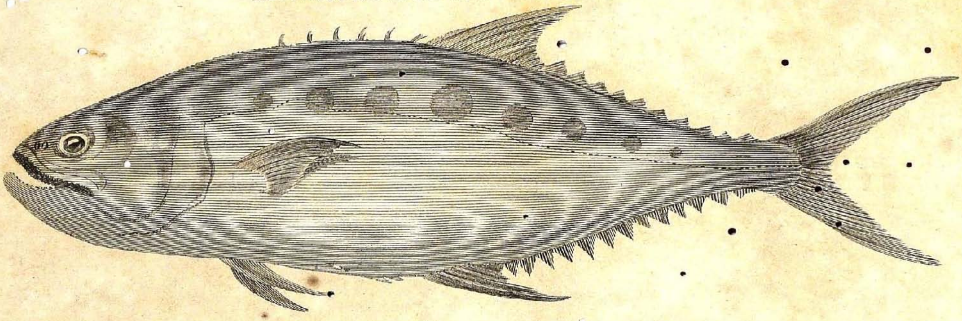
Scomber Pelamis. *S. argenteus, dorso cæruleo, corpore lineis utrinque quatuor longitudinalibus nigricantibus.*

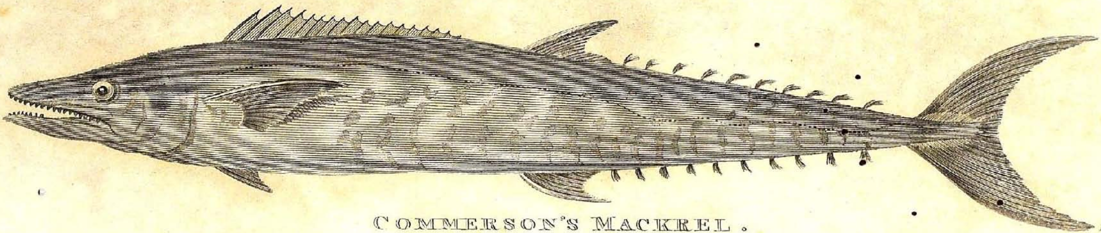
Silvery Mackrel, with blueish back, and body marked on each side by four longitudinal blackish streaks.

Scomber Pelamis. *Lin.*

General appearance that of the Tunny, but more slender: colour the same as in the Tunny, but distinguished by four linear stripes on each side beneath the lateral line: scales very small: ventral fins long and narrow, and occasionally received, as in several others of this genus, into a kind of channel beneath: first dorsal fin falciform, and depressed at pleasure into a fossule, so as to be quite concealed: tail strongly lunated: finlets eight above, and seven below; and on each side the base a coriaceous lamina: native of the Atlantic and tropical seas, and a very active, strong, and voracious species, persecuting flying-fishes, &c. in the manner of the Tunny, and is itself tormented by several species of intestinal worms; the *Fasciola clavata* being often found in considerable numbers in its stomach, and various kinds of *Tæniæ* and *Ascarides* in the bowels.

MADAGASCAR MACKREL.





COMMERSON'S MACKREL.

Heath sculp.

1803 July 1. London Publish'd by G. Kearsley Fleet Street.

COMMERSON'S* MACKREL.

Scomber Commersonii. *S. elongatus argenteus, dorso subfusco, lateribus maculis irregularibus fuscis.*

Silvery Mackrel, with elongated body, brownish back, and sides marked with irregular brown spots.

Scomber Commerson. *Cepede.*

SIZE not mentioned: habit remarkably long: jaws of equal length, and furnished with strong, sharp, distinct teeth: snout pointed: eyes large: gill-covers composed of two rounded laminæ: first dorsal fin long, and very shallow as it approaches the tail: second very short, and emarginated in the middle: vent fin similar: lateral line undulated in an unusual manner, especially towards the tail: general colour silvery, growing dusky towards the back, and varied on the sides by numerous, irregular, dusky spots: pinnules ten both above and below, each composed of four or five small rays united by a membrane: native of the Pacific ocean. Described by Cepede from the MSS. of Commerson.

* Philibert Commerson, an excellent naturalist, was born at *Chatelon les Dombes* near *Boury* in *Bresse* in the year 1727, and died in the Isle of France, whither he had accompanied Bougainville in his voyage round the world in the year 1773.

ALATUNGA MACKREL.

Scomber Alatunga. *S. pinnis pectoralibus longissimis, pinnulis caudæ utrinque septem. Lin. Gmel.*

Mackrel with very long pectoral fins, and seven finlets both above and below.

Scomber Alatunga. *Lin. Gmel.*

HABIT of the Tunny, but considerably smaller: pectoral fins so long as to reach almost to the end of the second dorsal: pinnules seven both above and below: native of the Mediterranean, appearing, like the Tunny, in large shoals, and in considerable esteem as a food.

MADAGASCAR MACKREL.

Scomber Madagascariensis. *S. subargenteus dorso cæruleo, corpore maculis rotundatis nigris serie laterali dispositis.*

Subargenteous Mackrel, with blue back, and body marked by a lateral row of round black spots.

Scomberoides Commersonii. *Cepede.*

ALLIED to the Tunny, growing to a very considerable size: colour nearly as in the Tunny: on each side the back, immediately above the lateral line, a row of eight or nine pretty large, round, blackish spots, those near the head and tail smaller than the rest: lower jaw rather longer than the upper: before the dorsal fin six distinct, strong, and sharp spines: pectoral and ventral fins rather short, and pointed: tail strongly forked: finlets ten

or twelve both above and below; they are of a triangular or pointed shape, and situated very close to each other at their bases: native of the African seas: observed by Commerson.

BOTLA MACKREL.

Scomber Botla. *S. subflavescens, dorso plumbeo, corpore squamoso, maculis lateralibus rotundatis fuscis.*

Yellowish Mackrel, with lead-coloured back, scaly body, and roundish, brown, lateral spots.

Botla Parah. *Russel's Indian Fishes. pl.* 142. *and* VAR.? *pl.* 137.

ALLIED to the preceding, and spotted in the same manner, but covered with middle-sized oval scales: length about eighteen inches: dorsal and anal fin long and somewhat falciform: finlets as in the former: seems to vary as to the number and size of the lateral spots.

LEOPARD MACKREL.

Scomber Leopardus. *S. cæruleus, subtus argenteus, lateribus maculis numerosis ovatis nigris.*

Blue Mackrel, silvery beneath, with numerous ovate lateral black spots.

Wingeram. *Russel. Ind. pl.* 134.

GENERAL shape of the Tunny, but rather more slender: length from two to three feet: colour dusky blue above, and silvery on the sides and abdomen: sides marked from the gills to the tail by pretty numerous and rather large oval black spots:

between the first and second dorsal fin five or six distinct spines: tail deeply forked; and on each side the base furnished with a projecting lamina: finlets eight above and seven below: native of the Indian seas: esteemed as a food by the Europeans, especially when not exceeding the length of about eighteen inches or two feet. Described by Dr. P. Russel.

MOTTLED MACKREL.

Scomber Maculosus. *S. supra cœruleo-virescens, maculis numerosis subalternis transversis elongatis nigris.*

Mackrel of a blue-green colour above, with numerous, subalternate, transverse, elongated black spots.

Konam. *Russel. Ind. pl.* 135.

Shape similar to that of the common Mackrel: length two feet eight inches: colour on the upper parts changeable greenish-blue, variegated by numerous transverse, alternate, short, blackish bars or spots: first dorsal fin rather shallow, sinking in the middle, and extending almost to the commencement of the second: tail much forked, and furnished with a slightly projecting lamina on each side the base: finlets ten above and twelve below. Native of the Indian seas. Described by Dr. Russel.

BLACK MACKREL.

Scomber Niger. *S. niger, subtus subargenteus, spinis dorsalibus octo, pinna dorsali unica.*
Black Mackrel, silvery beneath, with eight dorsal spines, and single dorsal fin.
Scomber niger. *Bloch.*

LENGTH from two to six feet: habit resembling that of the Pilot Mackrel; the head being short, and rounded in front: scales middle-sized: head without scales: before the dorsal fin a row of eight strong spines: dorsal fin single, the first part being of moderate length and of a subfalcated shape, suddenly sinking into the remainder, which is continued nearly to the tail: anal fin of similar shape: tail greatly forked: ventral fins white, with black edges: no pinnules either above or below: native of the African and American seas.

ASCENSION MACKREL.

Scomber Ascensionis. *S. glaucus, spina dorsali recumbente.*
Glaucous Mackrel, with recumbent dorsal spine.
Scomber glaucus. *Lin. Gmel. Mus. Ad. Frid.*

SECOND ray of the dorsal fin extremely long: no finlets: observed by Osbeck about the Isle of Ascension.

SMALL MACKREL.

Scomber Minutus. *S. squamosus argenteus, corpore dilatato, dorso subfusco.*
Scaly, silvery Mackrel, with dilated body, and brownish back.
Scomber minutus. *Bloch.*

Length about five inches: habit broad, resembling that of some of the Spari: scales middle-sized: dorsal fin commencing at the middle of the back, and continuing nearly to the tail: anal nearly opposite and of similar shape: eyes large: tail deeply forked: native of the Indian seas, sometimes entering rivers, and much esteemed as a food.

ACULEATED MACKREL.

Scomber Aculeatus. *S. argenteus, dorso subfusco, spinis dorsalibus octo decussantibus.*
Silvery Mackrel, with brownish back, and eight decussating dorsal spines.
Scomber aculeatus. *Bloch.*

Length seven or eight inches: habit that of the common Mackrel, but rather broader: before the dorsal fin about eight distinct and strong spines, some of which are placed in opposite directions, so as to cross each other at the tips: before the ventral fins two spines united by a membrane: dorsal and anal fin placed nearly opposite: tail forked: finlets about eleven, both above and below: native of the European and American seas, and esteemed nearly equal to the common Mackrel as a food.

SPUR MACKREL.

Scomber Calcar. *S. argenteus, dorso subfusco, spinis dorsalibus quatuor divergentibus.*
Silvery Mackrel, with brownish back, and four diverging dorsal spines.
Scomber Calcar. *Bloch.*

Somewhat allied to the former species, but of a broader or shorter shape: length ten or twelve inches: before the dorsal fin four very strong spines, diverging in such a manner as to bear some resemblance to a spur: first ray of the dorsal fin consists also of a strong spine: before the anal fin two strong spines connected by a membrane: dorsal and anal fin of similar size, and continued nearly to the tail, which is strongly forked. Native of the African seas.

RHOMBOID MACKREL.

Scomber Rhombeus. *S. argenteus, corpore rhombeo, squamis parvis.*
Silvery Mackrel, with rhombic body and small scales.
Centrogaster argenteus. *Lin. Gmel.*

Length about five inches: shape rhomboid: colour silvery, with very minute scales: dorsal and anal fin triangular at the fore-part and scaly at the base: tail glaucous, and slightly divided. Native of the Arabian seas. Observed by Forskal.

SADDLED MACKREL.

Scomber Equula. *S. argenteus, fronte carinis duabus osseis, occipite spinis duabus retroversis.*

Silvery Mackrel, with the front marked by two long keels and the hind-head by two reversed spines.

Centrogaster Equula. *Lin. Gmel.*

LENGTH nearly as in the preceding species: body ovate, compressed, smooth, silvery, and covered with very minute scales: head marked by two converging bony keels, and beyond the eyes furnished with two reversed spines: dorsal and anal fin continued to the tail, which is bilobate or forked: ventral fins connected by a membrane with four sharp spines and six soft rays. Native of the Arabian seas: observed by Forskal.

BROWNISH MACKREL.

Scomber Fuscescens. *S. fuscus, subtus albicans, cauda subbifurca.*

Brownish Mackrel, whitish beneath, with subbifurcate tail.

Centrogaster fuscescens. *Lin. Gmel.*

LENGTH five inches: upper mandible armed with sharp teeth: dorsal fin continued along the whole length of the back. Native of the Japanese sea.

BLACK-NECKED MACKREL.

Scomber Nigricollis. *S. argenteus, nuchæ gutta magna fusca, pinnæ dorsalis nigricante.*
Silvery Mackrel, with a large brown spot on the nape, and a blackish line on the dorsal fin.
Centrogaster argentatus. *Lin. Gmel.*

Length about three inches and a half: tail forked. Native of the Japanese seas.

With mailed lateral line.

SCAD MACKREL.

Scomber argenteus, squamis magnis, linea laterali late loricata.
Silvery Mackrel with large scales and widely-mailed lateral line.
Scomber Trachurus. *Lin.* The Scad Mackrel. *Penn. Br. Zool.*

Length from twelve to eighteen inches: shape rather broader than that of the common Mackrel: scales large and thin: lateral line strongly mailed from head to tail by a row of very broad scales, pointed at the middle: second dorsal, and anal fin continued to the tail, which is forked. Native of the European seas, and considered as nearly equal to the common Mackrel in point of flavour.

ROTTLERIAN MACKREL.

Scomber argenteo-flavescens, dorso viridi-cæruleo, pinnis pectoralibus lanceolatis rubris, linea laterali late loricata.
Yellowish-silvery Mackrel, with blue-green back, red, lanceolate pectoral fins, and widely mailed lateral line.
Scomber Rottleri. *Bloch.*

LENGTH about fourteen inches: shape like that of the common Mackrel: scales small: lateral line pretty distinctly marked at its beginning, curving over the base of the pectoral fins, and afterwards becoming very strongly mailed by broad acuminated scales, and running strait to the tail, which is strongly forked: finlets ten both above and below; before the anal fin two strong spines, connected by a membrane. Native of the Indian seas: not much esteemed as a food, the flesh being rather coarse.

PLUMIER'S MACKREL.

Scomber viridi-cæruleus, subtus argenteus, squamis magnis, pinnis pectoralibus lanceolatis, linea laterali rotundato-loricata.
Blue-green Mackrel, silvery beneath, with large scales, lanceolate pectoral fins, and roundly-mailed lateral line.
Scomber Plumieri. *Bloch.*

SIZE and habit nearly similar to that of the Scad: scales large and rounded: lateral line at a small distance beyond the pectoral fins becoming strongly and elegantly mailed by a row of dilated scales with pointed tips: fins and tail similar to those of the Scad.

PURSE-EYED MACKREL.

Scomber Crumenophthalmus. *S. argenteus, dorso subfusco, squamis parvis, oculis subobtectis, linea laterali rotundato-loricata.*
Silvery Mackrel, with brownish back, small scales, coated eyes, and roundly-mailed lateral line.
Scomber crumenophthalmus. *Bloch.*

Of similar size and habit with the two immediately preceding species: lower jaw longer than the upper: eyes large, and seated in a large, brown, transversely oval surrounding skin: scales small: lateral line, fins and tail as in the two preceding: native of the African seas, and found in considerable plenty about the coasts of Guinea.

CARANG MACKREL.

Scomber Carangus. *S. viridi-cæruleus, subtus argenteus, capite obtuso, pinnis flavis, linea laterali rotundato-loricata.*
Blue-green Mackrel, silvery beneath, with obtuse head, yellow fins, and roundly-mailed lateral line.
Scomber Carangus. *Bloch.*

Length about sixteen inches: shape like that of the Tunny, with a rounder, shorter, and blunter head, and thicker body in proportion: colour greenish blue, with a silvery tinge on the sides and abdomen: at the upper tip of the exterior gill-covers a black spot: scales middle-sized: lateral line pretty strongly mailed as it approaches the tail, which is deeply forked and of a yellow colour, as are also the other fins: no finlets, the dorsal and anal fin being continued to within a small distance of the tail: native of the American and Indian seas.

RED MACKREL.

Scomber Ruber. *S. ruber, subtus argenteus, squamis parvis, linea laterali versus caudam rotundato-loricata.*

Red Mackrel, silvery beneath, with small scales, and lateral line roundly-mailed towards the tail.

Scomber ruber. *Bloch.*

A HIGHLY beautiful species: length twelve or fourteen inches: general shape as in the Tunny and many others: colour beautiful rose-red, silvery on the sides and abdomen: scales small: fins yellowish at the base, and dusky towards their ends: pectoral fins long and lanceolate: lateral line mailed as it approaches the tail: no finlets, the second dorsal, as in the preceding species, being continued nearly to the tail, which is very deeply and sharply forked: native of the Indian and American seas: in no great esteem as a food, being considered as rather a coarse fish.

CHLOROTIC MACKREL.

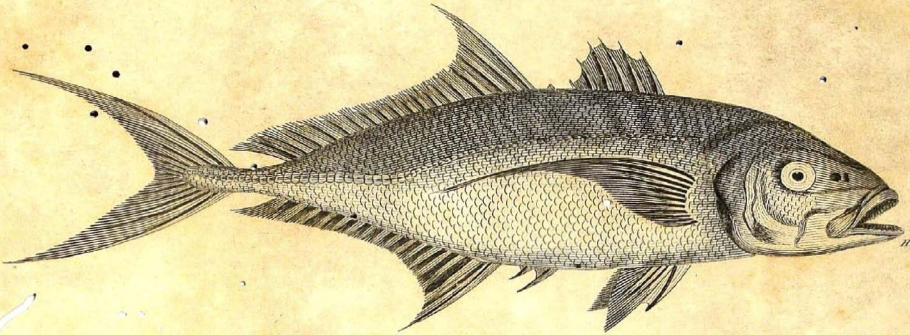
Scomber Chloris. *S. flavo-virescens, dorso olivaceo, linea laterali rotundato-loricata, angusta.*

Pale Yellowish-green Mackrel, with olivaceous back, and narrow, roundly-mailed lateral line.

Scomber Chloris. *Bloch.*

LENGTH twelve inches: shape rather broad or deep, and thin; tapering greatly towards the tail: colour very pale yellowish green, with a brownish tinge on the back: scales rather small: mouth small: eyes rather large: lateral line mailed throughout its whole length, from gills to tail, by a

RED MACKREL.



Heath sculp.

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row of small, rounded, but not pointed, scales: pectoral fins lanceolate, and reddish at the base, as is also the tail, which is deeply forked: native of the African seas.

KLEINIAN MACKREL.

Scomber Kleinii. *S. argenteo-flavescens, dorso violaceo, linea laterali versus caudam dilatato-loricata.*

Yellowish-silvery Mackrel, with violaceous back, and lateral line widely-mailed towards the tail.

Scomber Kleinii. *Bloch.*

A SMALLISH species: length from six to ten inches: habit nearly as in the immediately preceding species: colour silvery, with dusky back: scales rather small: lateral line mailed with very broad scales as it approaches the tail, which is very strongly forked: all the fins pale, and shaped as in the preceding species. Native of the Indian seas.

HIPPOS MACKREL.

Scomber Hippos. *S. macula operculari nigra, pinna dorsali posteriore rubra.*

Mackrel with a black spot on the gill-covers, and hinder dorsal fin red.

Scomber Hippos. *Lin. Gmel.*

WITH a single row of teeth, and two large in front: lateral line bending very much, and somewhat spiny or mailed as it approaches the tail: dorsal fin red; ventral and anal yellow: no finlets:

gill-covers marked by a black spot: native of the American seas: observed by Dr. Garden.

YELLOW-TAILED MACKREL.

Scomber Chrysurus. *S. pinnulis luteis, ore edentulo. Lin. Gmel.*
Mackrel with yellow finlets, and toothless mouth.
Scomber chrysurus. *Lin. Gmel.*

Without teeth: spines placed at some distance before the anal fin: no finlets: tail yellow: inhabits the American seas: observed by Dr. Garden.

FERDAU MACKREL.

Scomber Ferdau. *S. ovali-oblongus argenteus, guttis aureis lateralibus, fasciis transversis fuscis quinque obsoletis. Lin. Gmel.*
Oval-oblong silvery Mackrel, with lateral gold-coloured spots, and five transverse brown bands.
Scomber Ferdau. *Forsk. Arab.*

Scales small and deciduous: between the two dorsal fins a single spine: tail forked, and strongly keeled on each side: native of the Arabian seas: observed by Forskal.

SPECIOUS MACKREL.

Scomber Speciosus. *S. flavus, fasciis verticis obliquis, corporis septem nigris alternis.*

Yellow Mackrel, with oblique black bands on the head, and seven transverse ones on the body.

Scomber speciosus. *Forsk. Arab.*

Scales small and deciduous: fins yellow: no finlets: tail forked: native of the Arabian seas: observed by Forskal.

GASTEROSTEUS. STICKLEBACK.

Generic Character.

Corpus subelongatum.	*Body* somewhat lengthened.
Spinæ dorsales distinctæ.	*Dorsal spines* distinct.
Pinnæ ventrales spinosæ.	*Ventral fins* spiny.
Abdomen utrinque carinatum, subtus osseum.	*Abdomen* carinated or shielded on the sides, and bony beneath.

COMMON STICKLEBACK.

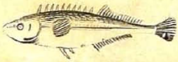
Gasterosteus Aculeatus. *G. olivaceus, subtus rubro-argenteus, spinis dorsalibus tribus.*

Olivaceous Stickleback, silvery-red beneath, with three dorsal spines.

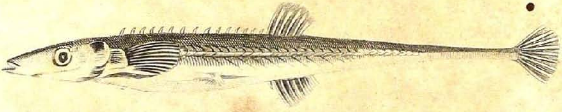
Gasterosteus aculeatus. *Lin.* Common Stickleback, Banstickle, &c.

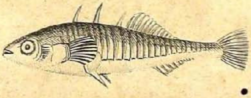
THIS minute fish is an almost universal inhabitant of ponds, rivers, and marshes, occurring sometimes even in salt or brackish waters. When in its full perfection of colour it is highly beautiful; the gills and abdomen being of a bright red, the back a fine olive green, and the sides silvery. It is chiefly in the early part of summer that it appears thus decorated; the colours in a great degree fading as the season advances. The general length of this species is about two inches, but it sometimes arrives to the length of three: the ventral fins consist

SMALLER STICKLEBACK.



FIFTEEN-SPINED STICKLEBACK.





Heath sculp.

COMMON STICKLEBACK.

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merely of a very strong and serrated spine on each side, accompanied by a single short ray.

The Banstickle is a fish of an extremely active and vigorous nature, swimming rapidly, and preying on the smaller kind of water insects and worms, as well as on the spawn of other fishes, and is from this circumstance considered as highly prejudicial to fish-ponds. In the Philosophical Transactions we find some observations relative to the natural history of this fish by Mr. Henry Baker, who informs us that it will spring occasionally to the perpendicular height of not less than a foot out of the water, and to a much greater space in an oblique direction, when wishing to get over stones or other obstacles. "It is scarce to be conceived," says this writer, "what damage these little fish do, and how greatly detrimental they are to the increase of all the fish in general among which they live: for it is with the utmost industry, sagacity, and greediness that they seek out and destroy all the young fry that come in their way, which are pursued with the utmost eagerness, and swallowed down without distinction, provided they are not too large: and in proof of this I must assert that a Banstickle which I kept for some time did on the 4th of May devour in five hours time seventy-four young Dace, which were about a quarter of an inch long, and of the thickness of a horse-hair: two days after, it swallowed sixty-two, and would, I am persuaded, have eat as many every day, could I have procured them for it."

The Stickleback is sometimes observed to swarm

in prodigious multitudes in some particular parts of Europe. We are told by Mr. Pennant that at *Spalding* in *Lincolnshire*, there are, once in seven years, amazing shoals, which appear in the *Welland*, and come up the river in the form of a vast column: they are supposed to be the multitudes that have been washed out of the fens by the floods of several years, and collected in some deep hole, till, over-charged with numbers, they are periodically obliged to attempt a change of place: the quantity is so great that a man employed to take them has got for a considerable time four shillings a day by selling them at the rate of a halfpenny per bushel.

SMALLER STICKLEBACK.

Gasterosteus Pungitius. *G. olivaceus, subtus subargenteus, spinis dorsalibus decem.*

Olivaceous Stickleback, subargenteus beneath, with ten dorsal spines.

Gasterosteus pungitius. *Lin.* Smaller Stickleback or Banstickle.

Found in similar situations with the preceding species, but is far less common: in size it is considerably smaller, rarely exceeding the length of an inch and three quarters, or two inches at the most: its shape is rather more slender, and its colours far less brilliant: it is readily distinguished by the number of its dorsal spines, which however are not always precisely constant in this respect, sometimes amounting only to nine, and sometimes, though very rarely, to eleven.

FIFTEEN-SPINED STICKLEBACK.

Gasterosteus Spinachia. *G. olivaceus, subtus subargenteus, linea laterali scutata, spinis dorsalibus quindecim.*

Olivaceous Stickleback, subargenteous beneath, with shielded lateral line, and fifteen dorsal spines.

Gasterosteus Spinachia. *Lin.* Fifteen-spined Stickleback. *Penn. Br. Zool.*

Much larger than either of the preceding species, and of a much more slender form: general length from five to six, or seven inches: head of a produced and somewhat tubular shape: hinder parts very slender towards the tail: lateral line broad and composed of a series of small dusky laminæ or scuta: dorsal spines concealed at pleasure in a longitudinal channel: ventral fins each composed of two spines; the first long, the next short: native of the European seas, frequenting shallow places, and preying on marine insects, and the spawn of other fishes: sometimes seen in vast numbers about the coasts of Holland, &c. and occasionally used, like the Common Stickleback, for the purpose of manuring land, as well as for the preparation of oil for lamps, &c.

MINUTE STICKLEBACK.

Gasterosteus Spinarella. *G. capitis postice spinis quaternis serrulatis, lateralibus longitudine abdominis. Lin. Gmel.*
Banstickle with four serrulated spines at the hind-part of the head, the lateral ones equalling the abdomen in length.

A VERY small species: head furnished on the back part with four serrulated spines, of which the lateral ones are as long as the abdomen. Native of India.

TWO-SPINED STICKLEBACK.

Gasterosteus Biaculeatus. *G. spinis dorsalibus duabus.*
Stickleback with two dorsal spines.
Two-spined Stickleback. *Penn. Arct. Zool. suppl.*

MENTIONED by Mr. Pennant on the authority of Dr. Forster: found about New York.

CAROLINA STICKLEBACK.

Gasterosteus Carolinensis. *G. spinis dorsalibus octo, analibus tribus.*
Stickleback with three dorsal and two anal spines.
Gasterosteus Carolinus. *Lin. Gmel.*

BODY oblong-oval: lateral line subcarinated towards the tail: dorsal and anal fin falcated: tail forked: allied to the genus Scomber. Native of the seas about Carolina.

CANADA STICKLEBACK.

Gasterosteus Canadensis. *G. spinis dorsalibus octo, analibus nullis.*
Stickleback with eight dorsal and no anal spines.
Gasterosteus Canadus. *Lin. Gmel.*

Dorsal and anal fin subfalcated: tail slightly bilobate: native of the American seas.

SKIPPING STICKLEBACK.

Gasterosteus Saltatrix. *G. spinis dorsalibus octo membrana connexis.*
Stickleback with eight dorsal spines connected by a membrane.
Gasterosteus Saltatrix. *Lin. Gmel.*

Allied in some degree to the genus Perca: in the upper jaw two rows of teeth; in the lower one: dorsal spines weak, connected by a fine membrane, situated low on the back, and received at pleasure into a furrow or channel: colour of the back green: tail forked. Native of the seas of Carolina, where it is observed to be very frequently skipping out of the water.

JAPANESE STICKLEBACK.

Gasterosteus Japonicus. *G. spinis dorsalibus quatuor, membrana branchiostega quinqueradiata. Lin. Gmel.*

Stickleback with four dorsal spines, and five-rayed gill-membrane.

LENGTH about five inches: head obtuse: body covered with large rhombic scales, each ciliated at the edges and terminating in a spine: dorsal spines thick, strong, moveable, and of unequal lengths: ventral fins furnished with a thick, strong, and scarcely moveable spine of about half an inch in length: native of the Japanese seas.

MULLUS. SURMULLET.

Generic Character.

Caput compressum, declive, squamosum.	*Head* compressed, scaly.
Os cirratum.	*Mouth* bearded.
Membr: branch: triradiata.	*Gill-membrane* three-rayed.
Corpus squamis magnis subdeciduis.	*Body* covered with large subdeciduous scales.

RED SURMULLET.

Mullus Ruber. *M. corpore rubro.*
Surmullet with red body.
Mullus barbatus. *Lin.*

THE red Surmullet is principally found in the Mediterranean and Northern seas, where it arrives at the length of twelve or fifteen inches: its colour is an elegant rose-red, tinged with olive-colour on the back, and of a silvery cast towards the abdomen: the scales are thin and easily separated, and when rubbed off, the skin itself appears of a brighter red. The Surmullet is a fish of a strong and active nature, swimming briskly, and feeding principally on the smaller fishes, worms, and sea-insects. It is generally considered as a very delicate fish, and is celebrated for having been the fashionable object of Roman luxury, and for which such enormous sums

are reported to have been sometimes given; though it is probable that the high estimation in which it was held by the ancient Greeks and Romans was more owing to a prejudice entertained on account of its elegant appearance, than to its real merit as a food. The Romans practised a singular refinement in luxury by first bringing the fish alive to the table in a glass vessel, in order that the guests might enjoy the pleasure of contemplating the beautiful changes of its evanescent colours during the time of its gradual expiration; after which it was prepared for their repast*.

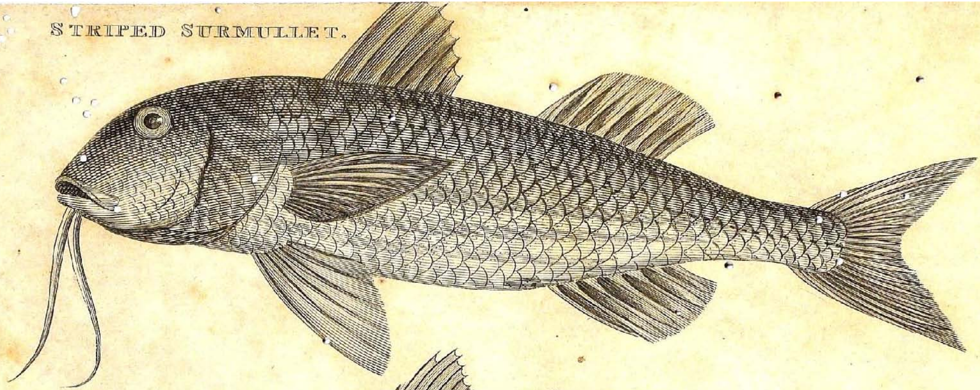
* Mullum expirantem versicolori quadam et numerosa spectari, proceres gulæ narrant, rubentium squamarum multiplici mutatione pallescentium, utique si vitro spectetur inclusus.

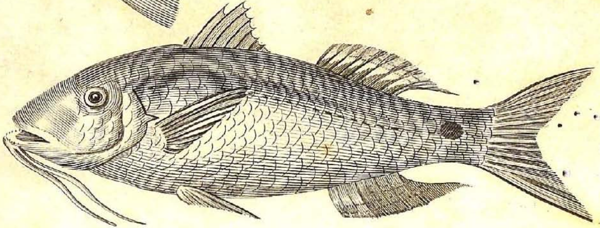
Plin. lib. 9. *cap.* 17.

Ad hunc fastum pervenere ventres delicatorum, ut gustare non possint piscem, nisi quem in ipso convivio natantem palpitantemque viderint. Quanto ad solertiam luxuriæ plures eunt, tanto subtilius quotidie et elegantius excogitat furor, usitata contemnens: illa audiebamus nihil esse melius saxatili Mullo: at nunc audimus, nihil est moriente formosius. Da mihi in manus vas vitreum in quo exultet, in quo trepidet: ubi multum diuque laudatus in illo perlucido vivario extrahitur, tunc ut quisque peritior est monstrat. Vide quomodo exarserit rubor omni acrior minio! vide quas per latera venas agat! ecce! sanguinem putes ventrem! quam lucidum quiddam cæruleumque sub ipso tempore effulsit! jam porrigitur et pallet, et in unum colorem componitur!

Seneca.

STRIPED SURMULLET.





Heath sculp.

ORIFLAMME SURMULLET.

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STRIPED SURMULLET.

Mullus Surmuletus. *M. ruber, lineis utrinque duabus vel tribus longitudinalibus flavis.*

Red Surmullet, marked on each side with two or three longitudinal yellow streaks.

Mullus Surmuletus. *Lin. Gmel.*

Striped Surmullet. *Penn. Brit. Zool.*

Of similar size and general appearance with the preceding, but marked on each side by two, and sometimes three longitudinal yellow stripes. Native of the Mediterranean, but found occasionally in the Atlantic and other seas: in equal esteem as a food with the former, of which it has even been considered by some authors as a variety.

ORIFLAMME SURMULLET.

Mullus Auriflamma. *M. fusco-flavescens, vitta utrinque longitudinali fulva.*

Yellowish-brown Surmullet, with a longitudinal fulvous band on each side the body.

Mullus auriflamma. *Forsk. Arab.*

Length about eight or ten inches: colour gilded brown, paler beneath, with a longitudinal stripe on each side the body of an oriflamme or fulvous colour, situated above the lateral line, and accompanied by a dusky spot near the base of the tail, which, together with the dorsal fin, is yellow: the other fins, with the beards or cirri beneath the under jaw, are whitish. Native of the Arabian seas.

INDIAN SURMULLET.

Mullus Indicus. *M. supra purpureus, infra albicans, corpore utrinque bimaculato.*

Surmullet with the body purple above, whitish below, and marked on each side by two spots.

Rahtee Goolivinda. *Russel ind. pl.* 157.

Size and habit of the common or red Mullet: colour extremely beautiful in the living fish, but fading very soon after death: upper part of the head, and back, dark changeable purple, growing faint on the sides, which are marked by a few longitudinal azure and golden lines, and by two oblong spots on each side: the first situated about the middle of the body, smallish, and of an opaline or changeable golden and white colour: the second situated near the tail, larger, and of a dark purple: abdomen white: dorsal fin purple, streaked with light blue: pectoral and anal pink-colour: native of the Indian seas: observed by Dr. Russel near *Visgapatam*: inferior as a food to the red Mullet, and not much esteemed.

BANDI SURMULLET.

Mullus Bandi. *M. albidus, fasciis utrinque duabus longitudinalibus flavis.*

Whitish Surmullet, with two longitudinal yellow bands on each side.

Bandi Goolivinda. *Russel ind. pl.* 158.

Habit similar to the former: length about six inches: body white, with two yellow fillets on each side from gills to tail: breast and belly greenish white: dorsal and caudal fin streaked obliquely with yellow and dusky lines: ventral and anal greenish white: inhabits the river near *Visgapatam*: observed by Dr. Russel: in little or no esteem as a food.

JAPANESE SURMULLET.

Mullus Japonicus. *M. corpore flavo.*

Surmullet with yellow body.

Mullus Japonicus. *Lin. Gmel.*

Habit of the red Surmullet; of which it has sometimes been supposed a variety: length about six inches: teeth very small: native of the Japanese seas.

BANDED SURMULLET.

Mullus Vittatus. *M. albus, fasciis utrinque duabus longitudinalibus fuscis, tribus flavis.*

White Surmullet, marked on each side by two longitudinal brown and three yellow bands.

The two brown bands in this species are above the lateral line, and the three yellow ones below it: of these the first or uppermost is of a deep, and the two lower ones of a pale yellow: fins whitish; the dorsal and caudal streaked obliquely with black lines: native of the Arabian seas: observed by Forskal.

TRIFASCIATED SURMULLET.

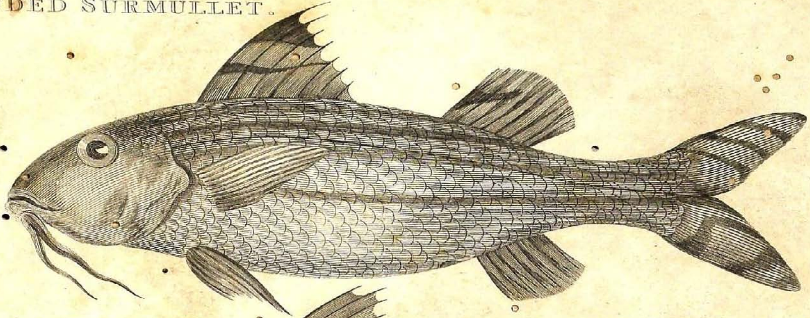
Mullus Trifasciatus. *M. albidus, fasciis utrinque tribus transversis fuscis.*

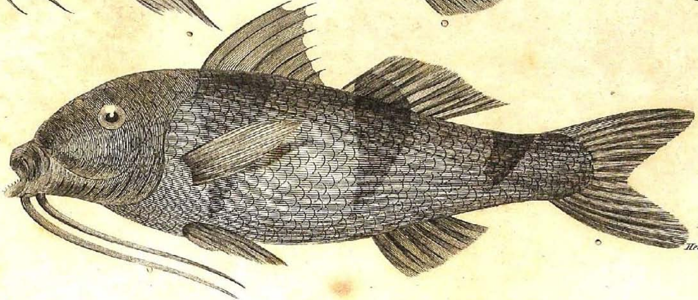
Whitish Mullet, with three transverse brown bands on each side.

Mullus trifasciatus. *Cepede.*

Habit similar to the rest of the genus: beards very long. Native of the Indian seas: observed by Commerson.

BANDED SURMULLET.





Heath sculp.

TRIFASCIATED SURMULLET.

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BIFASCIATED SURMULLET.

Mullus Bifasciatus. *M. albidus, fasciis utrinque duabus transversis fuscis.*
Whitish Surmullet, with two transverse brown bands on each side.
Mullus bifasciatus. *Cepede.*

HABIT nearly similar to the preceding: body marked by two very deep or dusky transverse bands, each terminating in a point towards the abdomen: beards rather short: native of the Indian seas: observed by Commerson.

SPOTTED SURMULLET.

Mullus Maculatus. *M. ruber, corpore utrinque maculis tribus rotundatis nigris.*
Red Surmullet, with the body marked on each side by three rounded black spots.
Mullus maculatus. *Bloch.*

SIZE of the common Surmullet: shape rather more lengthened than in the rest of the genus: colour of the whole animal bright red, with three large round black spots along each side. Native of the Brasilian seas.

RADIATED SURMULLET.

Mullus Radiatus. *M. ruber, orbitis flavo radiatis, macula lutea ad finem dorsi.*

Red Surmullet, with the orbits radiated with yellow, and a deep yellow spot towards the end of the back.

Mulle Rougeor. *Cepede.*

SECOND dorsal, and anal fin marked by oblique yellow streaks: native of the Indian seas: observed by Commerson.

GOLD-STRIPED SURMULLET.

Mullus Aureovittatus. *M. supra fusco-cærulescens, subtus albus, linea utrinque longitudinali aurea.*

Surmullet with the body brownish-blue above, whitish beneath, and marked on each side by a longitudinal gold-coloured line.

Mulle Cordon-jaune. *Cepede.*

TAIL and tips of the dorsal fins yellow: native of the Indian seas: observed by Commerson.

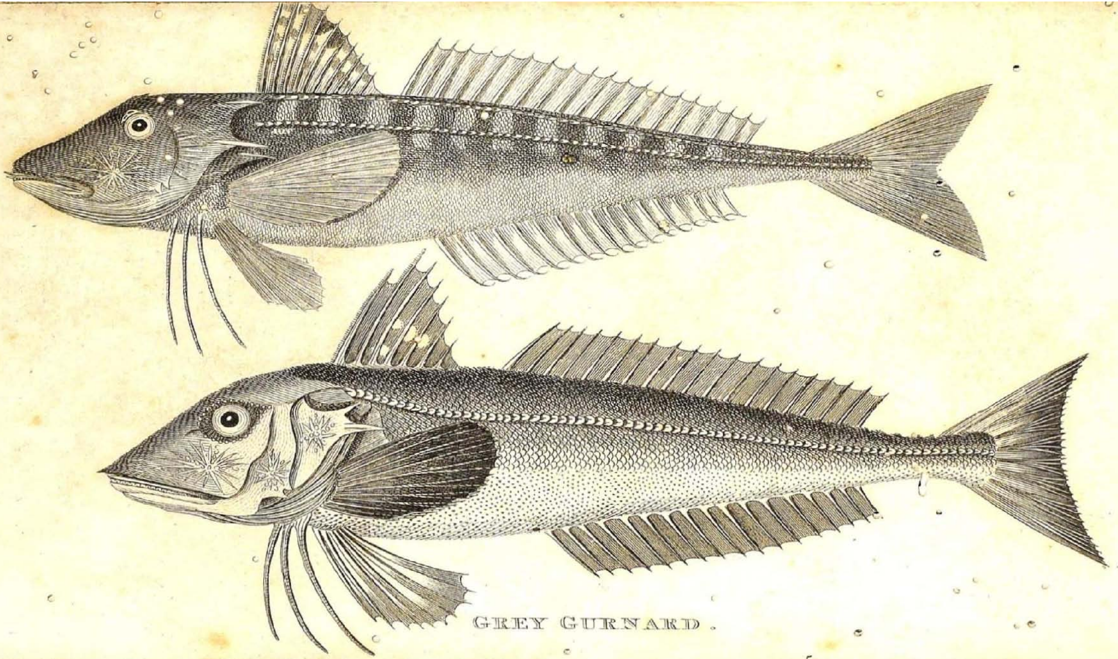
BEARDLESS SURMULLET.

Mullus Imberbis. *M. ruber, ore imberbi.*

Red Surmullet, with beardless mouth.

Mullus imberbis. *Lin. Gmel.*

NATIVE of the Mediterranean: mouth wide: differs from the rest of the genus in wanting the cirri beneath the lower lip.



Heath sculp.

GREY GURNARD.

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TRIGLA. GURNARD.

Generic Character.

Caput magnum, loricatum, lineis scabris.	*Head* large, mailed, and marked by rough lines.
Opercula spinosa.	*Gill-covers* spiny.
Membr: branch: radiis septem.	*Gill-membrane* seven-rayed.
Digiti (plerisque) liberi ad pinnas pectorales.	*Finger-shaped processes* (in most species) near the pectoral fins.

GREY GURNARD.

Trigla Gurnardus. *T. grisea, digitis ternis, linea laterali squamis rotundatis albidis loricata.*

Grey Gurnard, with triple fingers, and lateral line mailed with rounded whitish scales.

Trigla Gurnardus. *Lin.* Grey Gurnard. *Penn. Brit. Zool.*

LENGTH from one to two feet, or more: colour above deep grey, with blackish and red spots: beneath silvery: scales small: lateral line very strongly marked, and consisting of a series of larger, rounded, whitish scales with a dusky central spot. Native of the European seas, and not uncommon about our own coasts, feeding on worms, insects, &c.

PIPER GURNARD.

Trigla Lyra. *T. rubra, subtus argentea, digitis ternis, rostro bifido denticulato.*

Red Gurnard, silvery beneath, with triple fingers, and bifid denticulated snout.

Triga Lyra. *Lin.* Piper Gurnard. *Brit. Zool.*

Size nearly equal to the former species: lateral line formed of small scales: colour bright rose-red, silvery beneath: scales small: pectoral fins large, and slightly tinged with dull blue: tail of similar colour: the other fins yellowish, with red rays. Native of the European seas, and considered as an excellent fish for the table.

CUCKOW GURNARD.

Trigla Cuculus. *T. rubra, subtus argentea, digitis ternis, pinna dorsali priore macula nigra.*

Red Gurnard, silvery beneath, with triple fingers, and first dorsal fin marked by a black spot.

Trigla Cuculus. *Lin.* Red Gurnard. *Brit. Zool.*

An elegant species: length about a foot: shape more slender than in the preceding kinds: colour, on the upper parts, a beautiful red, more or less distinctly marked by whitish transverse bars: beneath silvery: scales extremely small: lateral line composed of pointed white scales edged with black: a similar row on each side the back: fins transparent; the first dorsal marked on the edge by a

black spot; the second tinged near its edge with yellow: native of the European seas, and esteemed as a food.

ASIATIC GURNARD.

Trigla Asiatica. *T. argentea, digitis quaternis.*
Silvery Gurnard, with quadruple fingers.
Trigla Asiatica. *Lin. Gmel.*

Body smooth; of a silvery colour: snout smooth and prominent: anterior gill-covers serrated: pectoral fins falcated. Native of the Indian seas.

SAPPHIRINE GURNARD.

Trigla Hirundo. *T. griseo-fusca, subtus argentea, digitis ternis, pinnis pectoralibus maximis olivaceis cæruleo-maculatis.*
Grey-brown Gurnard, silvery beneath, with triple fingers, and very large olivaceous pectoral fins spotted with blue.
Trigla Hirundo. *Lin.* Sapphirine Gurnard. *Brit. Zool.* Tub-Fish. *Will.*

Size equal to that of the grey Gurnard: scales middle-sized: lateral line rough: pectoral fins very large, of a violaceous olive, sometimes, according to Mr. Pennant, richly edged and spotted with blue: native of the European seas, occasionally springing out of the water to some distance by means of its large pectoral fins.

FLYING GURNARD.

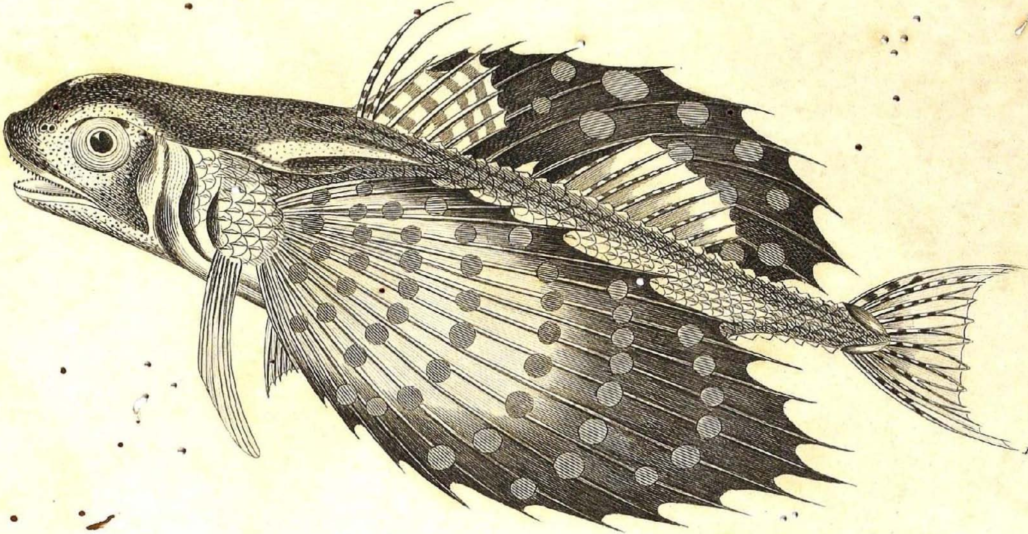
Trigla Volitans. *T. rubra, aculeato-squamosa, pinnis pectoralibus maximis cæruleo-maculatis, digitis senis membrana connexis.*

Red Gurnard, with aculeated scales, very large pectoral fins spotted with blue, and sextuple fingers connected by a membrane.

Trigla volitans. *Lin.* Milvus. *Salvian. Aldr. Will. &c.*

A HIGHLY singular and beautiful species: length about twelve inches: colour crimson above, pale or whitish beneath: head blunt, and armed on each side with two very strong and large spines pointing backwards: whole body covered with extremely strong carinated and sharp-pointed scales, so united as not to be distinctly separable: first dorsal fin pale violet, crossed with deeper lines, and at its origin two separate rays longer than the rest: second dorsal fin pale, with the rays barred with brown: pectoral fins extremely large, transparent, of an olive-green, richly varied with numerous bright-blue spots: pectoral processes six* in number, and not separate, as in other species, but united into the appearance of a small fin on each side the thorax: tail pale violet, with the rays crossed by dusky spots, and strengthened on each side the base by two obliquely transverse bony ribs or bars. Native of the Mediterranean, Atlantic, and Indian seas, where it swims in shoals, and is often seen flying out of the water to a considerable distance, in the manner of the genus Exocœtus.

* By a singular oversight in the Systema Naturæ the thoracic processes or fingers in this species are said to be twenty in number "*digitis vicenis.*"



Heath sculp.

FLYING GURNARD.

1803 July 1. London Publish'd by G. Kearsley Fleet Street.

SPRINGING GURNARD.

Trigla Evolans. *T. digitis ternis, mucronibus tribus serratis pinnis dorsalibus interpositis. Lin. Gmel.*

Gurnard with triple fingers, and three serrated spines between the dorsal fins.

Trigla evolans. *Lin.* Trigla volitans minor. *Brown Jam. t. 47.*

Allied to the preceding species, but furnished with three separate pectoral processes: the pectoral fins very large, but not equal to those of the preceding: between the dorsal fins three serrated spines: pectoral fins blackish. Native of the American seas.

LUCERNA GURNARD.

Trigla Lucerna. *T. digitis ternis, rostro subbifido, linea laterali ad caudam bifida. Lin. Gmel.*

Gurnard with triple fingers, subbifid snout, and lateral line bifid at the tail.

Native of the Northern seas: perhaps a variety of the T. Hirundo.

CAROLINA GURNARD.

Trigla Carolina. *T. albida rubro-punctata, digitis ternis, pinnis pectoralibus fuscis nigro transversim fasciatis.*

Whitish Gurnard, speckled with red, with triple fingers, and brown pectoral fins transversely banded with black.

Trigla Carolina. *Bloch.*

Length about ten inches: upper parts marked by numerous small red spots: dorsal fins pale, with the rays spotted with brown; the first fin marked by a black spot: tail slightly rounded at the end, and crossed by three or four rows of brown spots. Native of the American seas.

JAPANESE GURNARD.

Trigla Japonica. *T. digitis undenis membrana palmatis.*

Gurnard with eleven fingers on each side, palmated by a membrane.

Trigla alata. *Lin. Gmel.*

A small species: of about four inches in length: head angular: lower jaw and hinder margin of the gill-covers furnished with two strong spines: native of the Japanese sea.

MINUTE GURNARD.

Trigla Minuta. *T. digitis ternis, dorso bicarinato. Lin. Gmel.*
Gurnard with triple fingers, and bicarinated back.

A small species: at least the specimen described by Linnæus measured only three inches in length; though perhaps not arrived at its full size: head hard and rough; emarginated and denticulated in front, and furnished with two spines above the eyes, two at the hind-head, and two stronger ones at the back part of the crown: posterior gill-covers spiny: pectoral and ventral fins very sharp-pointed: tail rounded. Native of the Indian seas.

CAVILLONE GURNARD.

Trigla Cavillone. *T. rubra, capite spina utrinque super oculos, & sex utrinque ad occiput.*
Red Gurnard with a single spine above each eye, and six on each side the back of the head.
Cavillone. *Rondel. Cepede.*

Described and figured by Rondeletius: length about three inches: head furnished with a spine above each eye, and six large ones at the hind part: body covered with small, denticulated, rough scales: colour red: pectoral fins white above, and dark-green or olive beneath: native of the Mediterranean, and known about some parts of the French coasts by the title of *Cavillone*.

PUNCTATED GURNARD.

Trigla Punctata. *T. rosea, sanguineo-punctata, capite lato, obtuso, postice spinoso.*

Rose-red Gurnard, with blood-red specks, and broad obtuse head, spined on the hind-part.

Trigla punctata. *Bloch.*

Length about eight inches: head very broad, obtuse, and furnished behind with strong spines: colour of head and whole body bright rose-red, sprinkled over on the upper parts with numerous deep-red specks: scales middle-sized: pectoral fins very large, rounded, and of a dusky blue colour, speckled with red, and inclining to yellow towards their tips: rest of the fins and tail yellow, speckled with red. Native of the American seas.

LINEATED GURNARD.

Trigla Lineata. *T. rubra, maculis supra fusco-sanguineis, corpore utrinque lineis numerosis transversis.*

Red Gurnard, marked above by dusky-sanguine spots, with the body crossed on each side by numerous perpendicular lines.

Trigla lineata. *Lin. Gmel.* Streaked Gurnard. *Brit. Zool.*

Size and habit of T. Cuculus: colour bright red, marked on the upper parts with dark-red patches or spots: abdomen silvery: on each side the back, close to the base of the dorsal fins, a row of broad, serrated, short processes of a yellow colour: lateral line formed by a row of similar ones: body covered

with small scales: sides marked above and below the lateral line into very numerous, narrow, perpendicular divisions: pectoral fins pretty large, rounded, and of a dusky brown, spotted with black: rest of the fins yellowish, with a tinge of red, especially the tail, which is slightly lunated: native of the Mediterranean.

VAR. ?

Trigla Adriatica. *T. corpore squamis verticillato, linea laterali aculeata, pinnis pectoralibus subtus nigris, digitis ternis. Lin. Gmel.*

Gurnard with the body verticillated by scales, with aculeated lateral line, pectoral fins black beneath, and triple fingers.

This chiefly differs from the preceding in being varied with bands of black spots, and having the spots of the pectoral fins disposed into two transverse bands, while the edges are marked beneath by a row of blue spots: observed in the Adriatic sea.

PINE TRIGLA.

Trigla Pini. *T. rubra, digitis ternis, corpore utrinque lineis numerosis transversis convexis.*

Red Gurnard, with triple fingers, and body marked on each side by numerous transverse convex lines.

Trigla Pini. *Bloch.*

Habit similar to that of the Piper; but in other respects greatly allied to the lineated Gurnard:

colour red, with the abdomen yellowish: scales small: dorsal and lateral line aculeated: from the latter pass numerous perpendicular convex lines of division, terminating rather obtusely both above and below, and not ill resembling the form of pine-leaves: fins and tail yellowish: ventral fins red, with an obscure blueish cast: native regions unknown.

MAILED GURNARD.

Trigla Cataphracta. *T. rubra, rostro bifurcato elongato, digitis binis, corpore octogono cataphracto.*

Red Gurnard, with lengthened forked snout, double fingers, and octagonal mailed body.

Trigla cataphracta. *Lin.* Cornuta. *Rondel. Gesn.*

Length about twelve inches: snout deeply bifurcate, with the forks of considerable length, and rounded at their tips: body octagonal, and completely mailed by bony scales: the longitudinal rows or divisions of the body being marked by so many serrated or aculeated lines: beneath the throat a pair of ramified cirrhi: pectoral fins and tail pale brown: the other fins pale yellow, and nearly transparent: rays of the first dorsal fin running out beyond the membrane: native of the Mediterranean.

CHABRONTERA GURNARD.

Trigla Chabrontera. *T. corpore subtus cataphracto, pinnis rubris.*
Gurnard with the body mailed beneath, and red fins.
Trigla Chabrontera. *Cepede.*

EXTREMELY allied to the preceding, but differs in not having the body marked into an octagonal form; the under parts only being furnished with bony divisions: above the snout are several spines pointing backwards; and above and below the tail are also placed three spines: all the fins, except the tail, are of a bright red. Native of the Mediterranean.

Generic Character.

Caput antice rotundatum: oculi magni: os amplum, edentulum, descendens.

Membr: branch: radiis octo, quorum quatuor inferiores margine scabri.

Squamæ scabræ: abdomen carinato-cataphractum.

Head rounded in front: eye large: mouth wide, toothless, descending.

Gill-membrane furnished with eight rays, of which the four lowermost are rough on the edges.

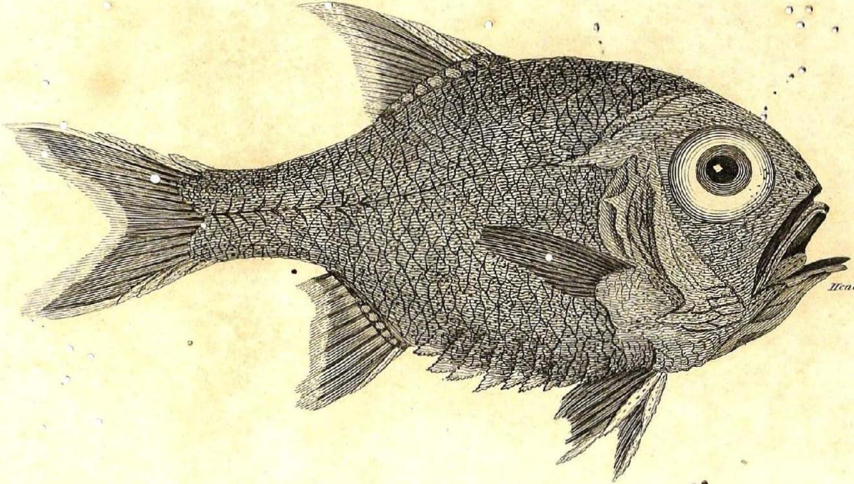
Scales rough: abdomen mailed with large carinated scales.

SOUTHERN TRACHICHTHYS.

Trachichthys Australis. *T. abdomine loricato.*
Trachichthys with mailed abdomen.
Trachichthys Australis. *Nat. Misc. t.* 378.

THIS genus, consisting of a single species only, was first described in the Naturalist's Miscellany. I shall therefore repeat my former description from that publication.

This remarkable fish is represented on the plate in its natural size. The body is moderately thick, more especially on the fore-part: the head is very large; the mouth opening downwards in an almost perpendicular direction, but in a curved line, and, when closed, the outline of the head or front is completely oval: the eyes are extremely large, and the



Heath sculp.

SOUTHERN TRACHICHTHYS.

1803. July 1 London Published by G. Kearsley Fleet Street.

iris appears to have been of a silvery hue, or as in the generality of fishes. The mouth is destitute of teeth, and the tongue, which is moderately large, is adnate, or fixed to the lower jaw, to the extremity of which it almost reaches. The opercula or gill-covers are furnished on the upper part with a large, strong, and rough spine, which is very thick at its base: a smaller and shorter spine also occurs at the lower part: the outline of each operculum is somewhat sinuated by two very short and subacute processes towards the middle; and the remainder is composed of five or six rough-edged lamellæ resembling the surface of the body. The *membrana branchiostega* has about eight rays, of which the four lowermost are rough-edged, and thicker than the rest. Perhaps no fish yet known, if we except what are called mailed or cataphracted fish, is so strongly coated as the present; the scales forming a kind of processes, which are so strongly and closely inserted, that it is not possible by means of a forceps to detach one from the rest, without bringing away with it a small portion of the corium or general integument itself; the skin in this respect resembling in some degree that of the genus *Balistes*. These scales or processes, as to their general structure, are analogous to those of the Chætodons; terminating outwardly in a fringe of small, strong spines, besides several scattered ones on the surface. They differ somewhat in shape on different parts of the animal, and as they approach the abdomen become more dilated. The abdomen itself is carinated and cataphracted by a row of eight strong, rough incisures or scales, each of which

projects into a shortish spine, pointing backwards, and forming a sharp keel beneath, while the sides are continued upwards near a quarter of an inch on each side the abdomen. The scales of the abdomen, as before observed, are also somewhat broader in this part, and gradually lessen towards the middle of the body. On each side the tail is a slightly prominent line, or an approach to a carinated appearance, owing to the middle of each scale on that part rising up a little above the level of the rest: the scales also along this part are rather larger than elsewhere; otherwise the appearance of a lateral line is scarce distinct. The dorsal fin has fourteen rays, of which the seven hindermost subdivide towards their tips into softer ramifications. The pectoral fins have thirteen rays: the ventral fins seven; and the anal fin twelve rays, most of which subdivide into softer ramifications at the tip. The tail is strongly furcated, and consists of about twenty-four rays, of which the external or shorter ones are strong or spiny; the rest of a similar appearance to those of the anal fin. The three first rays of all the fins, except the pectoral ones, are very strong, rough, and finely serrated outwards, but more particularly those of the ventral fins.

The *Trachichthys Australis* is a native of the coasts of New Holland. Its colour is a bright pink-ferruginous, or fair reddish-brown; the middle part of all the fins of a deeper colour than the rest of the animal, and the edges lighter, or of a yellowish tinge.

END OF VOLUME IV.

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